KHACHATUROV, S.G., inzh. (Tashkent); SHNEYER, I.A., dotsent (Tashkent)

Some properties of loess loams important in the construction of dams by the method of mechanized dumping of soil into water. Gidr. i mel. 13 no.8:46-52 Ag '61. (MIRA 14:8)

(Dams)

SHNEYER, I.A., kand.tekhn.nauk; KORSUNTSEV, V.I., inzh.

Experimental earth-fill of the earth dam in construction of the Golovnaya Hydroelectric Power Station. Gidr. stroi. 32. no.8:10-13 Ag '62. (MIRA 15:9)
(Golovnaya Hydroelectric Power Station--Dams)
(Earthwork)

SHNEYER, I.A.

Suspension capacity of a flow in the settling of sediments. Izv. Uzb.fil.Geog.ob-va 6:30-38 '62. (MIRA 15:8)
(Sedimentation and deposition)

SHNEYER, I.A.

Sedimentation in headwaters. Izv.AN Uz.SSR.Ser.tekh.nauk 6 no.1: 63-74 '62. (MIRA 15:2)

1. Tashkentskiy universitet imeni V.I.Lenina.
(Sedimentation and deposition)

SHNEYER, I. A.

Silting of a water reservoir. Izv. AN Uz.SSR. Ser. tekh. nauk 6 no.5:62-71 '62. (MIRA 15:10)

1. Tashkentskiy gosudarstvennyy universitet imeni V. I. Lenina.

(Silt) (Reservoirs)

SHNEYER, I.A.

Flow resistance of boulder-pebble soils. Nauch. trudy TashGU no. 213 Geography no. 24:111-121 '63. (MIRA 17:5)

SHNEYER, K.S., vrach

Work of the laboratory on improving the bacteriological diagnosis of dysentery. Zdrav.Turk. 2 no.3:43-44 My-Je '58. (MIRA 12:6)

1. Iz Ashkhabadskoy gorodskoy klinicheskoy bol'nitsy No.1 (glavnyy vrach - M.B.Shapiro).
(ASHKHABAD--BACTERIOLOGICAL LABORATORIES) (DYSENTERY--BACTERIOLOGY)

KORSHAK, V.V.; GOLOVA, O.P.; SERGEYEV, V.A.; MERLIS, N.M.; SHNEYER, R.Ya.

Polyethers of levoglucosan. Part 1: Polymerization of levoglucosan and its ethers. Vysokom.soed. 3 no.3:477-485 Mr '61. (MIRA 14:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Glucopyranose) (Polymerization)

SHNEYER, S.N.

Electrical Engineering
Abst.
Section B
March 1954
Regulation.

621.316.7.078

532. **Float-less device for automatic water filling of reservoirs.** S. N. SHNEER AND A. A. TAHS. *Promi. Energ.*, 1953, *No.* 5, 7–8. *In Russian.*

Two steel strip electrodes, insulated from each other, extend down to the minimum permissible water level in the tank; a third one is at the maximum level. Water on falling below the minimum level opens selenium rectifier-telephone relay circuits, thereby starting the pumping equipment. This is stopped when water on reaching the third electrode closes another relay circuit. A time-delay thermal relay starts an alarm system when water due to any reason is retained below minimum level for a certain time, thus detecting pumping failures. The device is simple, cheap and reliable, and can save overpumping water and energy. J. ŁUKASZEWICZ

SHNEYER, V.S., mladshiy nauchnyy sotrudnik

Secular variations of geomagnetic elements in the Mirnyy area. Inform. biul. Sov. antark. eksp. no.5:48-50 '59. (MIRA 12:10)

1.Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.
(Antarctic regions--Magnetism, Terrestrial--Secular variation)

SHNEYER, V.S., mladshiy nauchnyy sotrudnik

Nature of geomagnetic activity at the Lazarev Station according to the observations of 1959. Inform. biul. Sov. antark. eksp. no.22: 51-52 '60. (MIRA 14:5)

1. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut.
(Lazarev Station, Antartica—Magnetism, Terrestrial)

SHNEYER, V.S., mladshiy nauchnyy sotrudnik

Experience in operating the proton magnetometer at Mirnyy. Inform. biul.Sov.antark.eksp. no.42:57-58 '63. (MIRA 17:1)

1. Shestaya kontinental'naya ekspeditsiya.

L 53653-65 EWT(1)/FCC/EEC(t) Po-4/Pi-4 GW

ACCESSION NR: AT5011149 UR/3148/64/000/006/0027/0037

AUTHOR: Raspopov, O. M.; Shneyer, V. S. 20 B+1

TITLE: Observations of short periodic oscillations of the geomagnetic field on the drifting station SP-6 12

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. 3 razdel programmy MGG: Geomagnetizm i zemnyye toki. Sbornik statey, no. 6, 1964. Geomagnitnyye issledovaniya, 27-37

TOPIC TAGS: geomagnetic oscillation, oscillogram, magnetic storm, force line, non-homogeneity, ionospheric current

ABSTRACT: Observations of geomagnetic oscillations of short duration were started on the drifting station Severnyy Polyus-6 (North Pole-6) in 1959. The geographic coordinates of the station at the start of observations were 82°N lat and 7°E long. Oscillations were recorded by a variation of the Bryunelli-type apparatus. The period of magnetic oscillations was from 10 to 300 sec. The best agreement of oscillograms was obtained on Severnyy Polyus-6 and at Mirnyy in Antarctica. Records of a magnetic storm with sudden commencement showed total agreement of the process on Severnyy Polyus-6 and at Mirnyy. Short periodic oscillations recorded at other stations located at lower latitudes differed from those obtained on Severnyy Polyus-6

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ACCESSION NR: AT5011149

and Mirnyy, both in time and amplitude. The two polar stations are located on opposite ends of force lines along which the oscillations propagate. Oscillations of sinusoidal form recorded at these stations were not observed at other stations. Several differences in records of Mirnyy and Severnyy Polyus-6 are explained by non-homogeneities of the upper ionosphere and fluctuations of ionospheric currents. The general character of short periodic oscillations on Severnyy Polyus and at Mirnyy may be considered as proof of the hydrodynamic origin of short periodic oscillations. Orig. art. has: 1 table and 7 figures. [EG]

ASSOCIATION: none

SUBMITTED: 00	ENCL: 00	SUB CODE: ES
NO REF SOV: 005	OTHER: 000	ATD PRESS: 4013

Card 2/2

Temporary water supply for construction sites. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 26 p. (54-24802)

TH153.M594

SHNEYEROV, A.I.

SPYSHNOV, Petr Alekseyevich; SHNEYEROV, Aron Isaarovich; SHTEKKER, G.A., inzhener, nauchnyy redaktor; SMIRNOVA, A.P., redaktor; SMOL'YAKOVA, M.V., tekhnicheskiy redaktor.

[Handbook on water supply pipes, plumbing and drainage system inside a building; planning, design, equipment and calculations.] Spravochnik po vnutrennim vodoprovodu, kanalizatsii i vodostokam; proektirovanie, konstruktsii, oborudovanie i raschet. Izd. 2-e, perer. i dop. Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1954. 426 p. (MLRA 8:3)
(Plumbing)

LUK'YANOV, V.I.; MYSLIN, V.A.; SHNEYEROV, A.I.; KHORKHOT, A.Ya.; YELENSKIY, M.S.; MEL'NIKHOVA, O.M.; PLESHKOV, L.Ye.; ORLOV, V.V.; ZLATOLINSKIY, V.N.; VISHNEVSKIY, F.L.; LAPSHENKOV, P.G.; MAKHOV, M.S.; RUKAVISHNIKOV, I.D.; LYTKIN, K.F.; KOZHEVNIKOV, O.A.; ZORKIN, G.N.; NORMAN, B.B.; TUMANOV, N.S.; SEREBRYANIKOV, S.M.; VOLKOV, N.G.; NOVIKOV, P.G.; FRIDBERG, G.V., inzh., red.izd-va; GELINSON, P.G., tekhn.red.

[Designing chief plans for industrial plants; principal methods] Proektirovanie general'nykh planov promyshlennykh predpriiatii; osnovnye polozheniia. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 103 p. (MIRA 13:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut gradostroitel'stva i rayonnoy planirovki. 2. Nauchno-issledovatel'skiy institut gradostroitel'stva Akademii stroitel'stva i arkhitektury USSR (for Khorkhot, Yelenskiy, Mel'nikhova). 3. Gosudarstvennyy institut proyektirovaniya metallurgicheskikh zavodov (Gipromez) (for Pleshkov).

(Continued on next card)

SHNEYERSON, A.N.

Comparative evaluation of the new penicillins according to their action on clinical Staphylococcus strains. Antibiotiki 8 no.8:695-700 Ag '63. (MIRA 17:5)

1. Laboratoriya mikrobiologicheskikh metodov kontrolya (zav. - A. Ye. Tebyakina) Vsesoyuznogo nauchno-issledovatel'skogo instituta antibiotikov.

SHNEYEROV, B. YE.

36-71-7/16

AUTHOR: Shneyerov, B. Ye.

TITLE: The Effect of Incoming Heat on Large-Scale Atmospheric Movements (K voprosu o vliyanii pritokov tepla na krupnomasshtabnyye dvizheniya v atmosfere)

PERIODICAL: Trudy Glavnoy geofizicheskoy observatorii 1957, Nr 71, pp. 103-111 (USSR)

ABSTRACT: The article presents a method for solving general, two-dimensional, thermo-hydromechanical equations referring to large-scale movements provided that the distribution of temperature over irregular surfaces of the earth is given. Air displacements are divided into a basic (zonal) flow and small superposed perturbations (pressure waves). The question of heat movement must be considered for a complete solution of the problem relative to the pattern of pressures in the atmosphere. Heat originating in the condensing vapors and affected by turbulent heat conductivity cause marked perturbation of the main flow. Topographic irregularities also contribute to the formation of pressure waves. This study outlines as quasi-stationary the processes of filed of pressure and temperature of the three components of wind velocity based on the assumption that the configuration of the surface is known. (Six basic

Card 1/2

SHULYAKOV, D.Ye.

Determination of altitudinal instability variations in the calculation of vertical atmospheric currents. Trudy IAO no. 11[illegible]:40-4[illegible] '60. (MIRA 14:3)

(Winds)

SHNEYEROV, B.Ye.

Scheme for the solution of equations for the short-range forecasting of the geopotential and vertical speed. Trudy GGO no.124:48-55 '62. (MIRA 17:6)

SHVETS, M.Ye.; SHNEYEROV, B.Ye.

A nonadiabatic model of atmospheric motions utilizing the results of radiation measurements from satellites. Dokl. AN SSSR 152 no.3:598-601 S '63. (MIRA 16:12)

1. Glavnaya geofizicheskaya observatoriya im. A.I.Voyeykova. Predstavlero akademikom Ye.K.Fedorovym.

SHNEYEROV, B.Ya.; VOLCHEK, F.R.

Roll surface temperature. Sbor. trud. UNIIM no.11:164-167 '65. (MIRA 18:11)

VORONTSOV, N.M.; GUNIN, I.V.; NIKOLAYENKO, N.A.; SHNEYEROV, B. Ya., kand. tekhn. nauk; GOVOR, U.S.

Rolls for rolling lightweight channels. Sbor. trud. UNIIM no.9:196-216 '64 (MIRA 18:1)

SHVETS, M.Ye.; SHNEYEROV, B.Ye.

Calculation of the flow of heat into the soil. Izv. AN SSSR. Fiz. atm. i okeana 1 no.2:167-174 F '65. (MIRA 18:5)

1. Glavnaya geofizicheskaya observatoriya imeni Voyeykova.

L 51376-65 EWP(k)/EWA(c)/EWT(d)/EWT(m)/EWP(h)/EWP(b)/EWA(d)/EWP(l)/EWP(w)/EWP(v)/EWP(t) Pf-4 EM/JD/HW

ACCESSION NR: AP5010976 UR/0286/65/000/007/0165/0165

AUTHOR: Zakharov, M. F.; Feygin, V. I.; Roytbarg, L. Kh.; Shneyerov, I. S.; Yermanok, M. Z.; Gil'dengorn, M. S.

TITLE: An extrusion attachment. Class 49, No. 169985

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 165

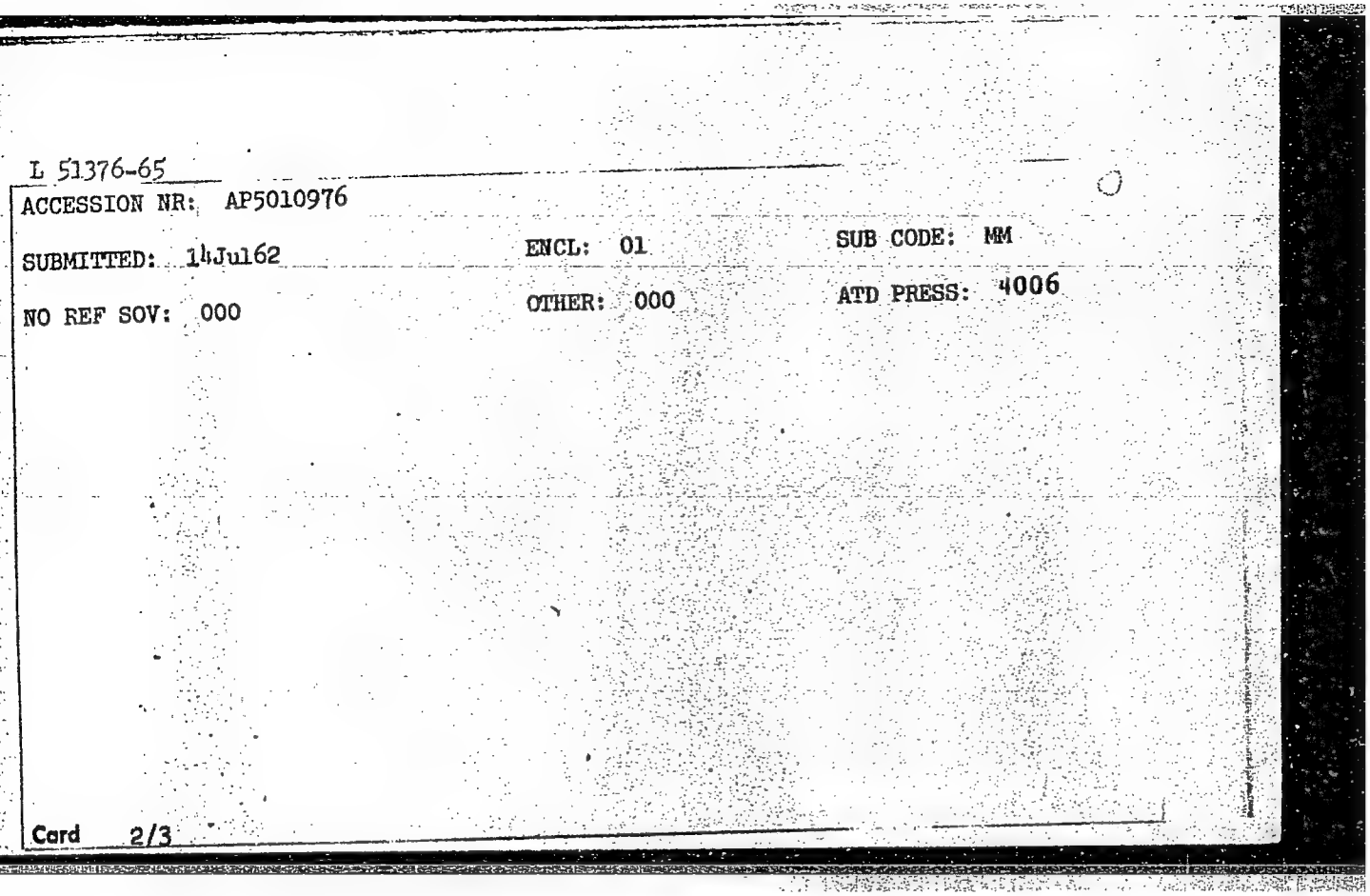
TOPIC TAGS: extrusion, panel extrusion, extrusion attachment, panel extrusion device

ABSTRACT: This Author Certificate introduces an attachment for the extrusion of panels from hollow billets. The device consists of a mandrel (see Fig. 1 of the Enclosure) fitted into a hollow stem and centered in the die which, during extrusion, forms the inner wall of the container. In order to lower the extrusion force and to increase the quality of extruded articles, the stem is designed as a cylinder in which the mandrel slides freely and the die has the shape of an open ring [WW]

Orig. art. has: 1 figure.

ASSOCIATION: none

Card 1/3



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ACCESSION NR: AP5010976

SUBMITTED: 14Jul62 ENCL: 01 SUB CODE: MM

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4006

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L 51376-65

ACCESSION NR: AP5010976

ENCLOSURE: 01

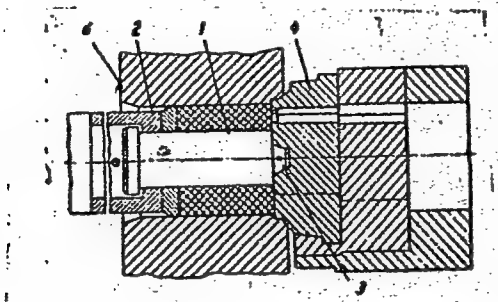

Fig. 1. Extrusion attachment

1 - Mandrel; 2 - hollow stem;
3 - free end of mandrel; 4 - die;
5 - container.

Card 3/3

SHNEYEROV, Lev Aronovich; LANKAU, A.N., red.; CHICHERIN, A.N., tekhn.red.

[The NMS typesetting and type founding machine] Nabornaia strokootlivnaia mashina NMS. Moskva, Gos.izd-vo "Iskusstvo," 1959. 191 p. (MIRA 13:2)
(Type and type founding) (Typesetting machines)

SEMIKOV, M. S. (MB Tsvetmetavtomatika, Moscow)

"Construction of Pressurized Air Apparatus for Strongly Aggressive Media,"

report presented at the Scientific Seminar on Pneumo-Hydraulic Automation, 28-29 May 1957, at the Inst. for Automation and Remote Control (IAT) Acad. Sci, USSR.

Avtomika i Telemekhanika, 1957, vol. 18, No. 12, pp. 1148-50, (author SEMIKOVA, A. I.)

Shneyerov, M.S.

SOV/136-58-6-3/21

AUTHORS: Averbukh, M.A., Burnashev, A.A., Birger, G.I., Baysh, L.G., Zubkiv, G.A., Zhiryakov, N.I., Isayev, D.V., Ovcharenko, Ye.Ya., Fromberg, A.B. and Shneyerov, M.S.

TITLE: New Means for Automatic Testing and Control in Non-ferrous Metallurgy (Novyye sredstva avtomaticheskogo kontrolya i regulirovaniya v tsvetnoy metallurgii)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 6, pp 15 - 25 (USSR)

ABSTRACT: Many processes in non-ferrous metallurgy involve corrosive media and the Konstruktorskoye byuro (Design Bureau) Tsvetmetavtomatika (KB TsMA) have s ince 1955 been working on pneumatic control methods, which are especially suitable for such conditions. Other organisations named by the authors as some of those working in the same field are: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics of the Ac. Sc.USSR), NIITeplopribor, TsLA of the "Energochermet" Trust and the "Tizpribor" Works. A wide range (Table 1) is covered by the pneumatic transducers, produced by the KB TsMA (Figures 1 and 2) in which use is made of a corrosion-resistant Soviet plastic. A series of corrosion-resistant valves have also been produced (Table 2),

Card 1/3 including a diaphragm type with a position indicator

New Means for Automatic Testing and Control in Non-ferrous Metallurgy

(Figure 3). For the continuous analysis of hydro-metallurgical solutions, the KB TsMA in 1957 developed (Figure 4) an automatic polarographic concentration-meter, type KAP-225, with a transducer type DAPK-226: this device has been successfully used at the "Elektrotsink" Works for analysing for cadmium in zinc electrolyte and is based on alternating-current polarography. The KB TsMA have developed a series of radioactive methods, particularly for level indication over a wide (type URP) (Figure 5) and a relatively narrow (type URPR) (Figure 6) range. A radioactive density-meter, type PR-150, independent of the mineralogical and size composition of pulp over a wide range has been successfully tested at the Zolotushinskaya obogatitel'naya fabrika (Zolotushinskaya Beneficiation Works) (ranges 1.5-2.5 and 1-2 kg/litre). Work is proceeding on other radioactive meters including a moisture meter, for concentrates and similar materials. Based on/a corrosion-resistant, differential, thermo-electric anemometer (electrical circuit) proposed by engineers V.A. Drozdov and A.M. Listov), a flowmeter for pure or air-diluted chlorine has been developed by the

New Means for Automatic Testing and Control in Non-ferrous Metallurgy

KB TsMA; they have also developed an analyser (type GAKh-239) for chlorine which is accurate to ± 3% and these two instruments are to be used in an integrated automation system being devised for the magnesium industry. The KB TsMA have developed an automatic installation for (Figures 7 and 8) controlling a single pump in relation to the liquid level. Another recent activity of this organisation has been the development of the type ATV-229 overheating protective device (Figure 9) and a twelve-point temperature signalling device (Figure 10). The ATV-229 device is to be produced by the Tsvetmetpribor Works. In collaboration with the Institut gigiyeny truda i profzabolevaniy AMN SSSR (Institute of Work Hygiene and Occupational Deseases of the AMS USSR), the KB TsMA have developed a device (Figure 11) for continuous measurement and recording of mercury-vapour concentration in air in the range 0.1 - 0.6 mg/m^3. This instrument (IKRP0445) (Figure 11) also gives an alarm signal if the concentration becomes excessive and its range is being extended in both directions.

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SOV/136-58-6-7/21

AUTHORS: Shneyerov, M.S., Podgoyetskiy, M.L. and Braverman, E.M.

TITLE: Automation of Technological Processes in Titanium-magnesium Production (Avtomatizatsiya tekhnologicheskikh protsessov titano-magniyevogo proizvodstva)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 6, pp 38 - 41 (USSR)

ABSTRACT: For automating titanium and magnesium production, special apparatus capable of operating in corrosive surroundings, is required. The KB TsMA started work on the automation of titanium production in 1955 in collaboration with the VAMI (All-Union Aluminium-magnesium Institute), a continuous chain of processes being chosen initially. For the chlorination of titanium-containing briquettes in a shaft electric furnace (together with the chlorine-gas preparation section) the scheme adopted (Figure 1) provides for regulation of temperature at the furnace exit by controlling the chlorine flow, automatic charging by a time-switch controlled system, the maintenance of constant pressure conditions in the condensation system. To facilitate the last, an ultrasonic flowmeter (Figure 2) for the flow of pulp to the sprays has been developed and successfully tested. In the rectification column control is effected by automatic regulation of the level in the

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reservoir at its base; standard equipment is used to regulate the rate of entry and temperature of the initial mixture. The KB TsMA on the basis of its own investigations and those of the VAMI have developed a system for the automatic control (Figure 3) of demountable types of reactors for the reduction of titanium tetrachloride with magnesium; a single, multiple-couple thermocouple with a special device ITM-205 is used to locate the maximal temperature up the reactor; the pneumatic signal from the type EPD-32 temperature controller goes to the KBTsMA-developed type RPD-327 pressure controller together with the signal from a pressure transducer measuring reactor pressure. The output from the RPD-327 goes to a type RK-27 valve (KB TsMA designed) and closes it if the temperature and pressure rise. Work is now proceeding on the automation of reduction in combined reactors. The author gives some quantitative estimates of the effects of automation in this industry.

SHNEYEROV, M. S.
P

28(1) PHASE I BOOK EXPLOITATION SOV/2702

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.
Seminar po pnevmogidravlicheskoy avtomatike. 1st, Moscow, 1957

Sistemy, ustroystva i elementy pnevmo- i gidroavtomatiki; [sbornik]
(Pneumatic and Hydraulic Circuits Devices, and Elements in
Automation; [Collection of Papers]) Moscow, Izd-vo AN SSSR,
1959. 233 p. Errata slip inserted. 2,700 copies printed.

Resp. Ed.: M. A. Ayzerman, Doctor of Technical Sciences, Professor;
Ed. of Publishing House: A. A. Tal'; Tech. Ed.: T. P. Polyakova.

PURPOSE: This collection of papers is intended for scientific research workers and engineers in the field of design and construction of pneumatic and hydraulic equipment and accessories for automation.

COVERAGE: This collection contains papers read at the Seminar on Pneumatic and Hydraulic Devices for Automation, May 28, 1957. The collection is divided into the following three groups: 1) newly developed pneumatic and hydraulic circuits 2) pneumatic and hydraulic devices, including regulating units, transmitters

Card 1/

ARKAD'YEV, A.G.; MAR'YANOVSKIY, Ya.M.; SHNEYEROV, M.S.

Measuring the rate of the air flow into flotation machines. Sbor. mat.po avtom.proizv.prots.i disp. no.5:19-26 '60.
(MIRA 14:4)

1. Konstruktorskoye byuro "TSvetmetavtomatika."
(Flowmeter) (Flotation--Equipment and supplies)

ARKAD'YEV, A.G.; MAR'YANOVSKIY, Ya.M.; SHNEYEROV, M.S.

Aeration meter for flotation machines. TSvet. met. 33 no.8:77 Ag '60. (MIRA 13:8)

(Flotation--Equipment and supplies)

ARKAD'YEV, A.G.; MAR'YANOVSKIY, Ya.M.; PODGOYETSKIY, M.L.; SHVARTSER, V.I.; SHNEYEROV, M.S.

Air-jet reaction feedback in pneumatic converters with power compensation. Priborostreenie no.2:5-7 F '61. (MIRA 14:2)
(Pneumatic control)

AFFILOV, A.A., inzh.; BAKALEYNIK, Ya.M., inzh.; BIRGER, G.I., inzh.; BRUK, B.S., inzh.; BUROV, A.I., inzh.; GINZBURG, V.L., inzh.; ZABELIN, V.L., inzh.; ZAPLECHNYY, Ye.G., inzh.; ISAYEV, D.V., inzh.; KLIMOVITSKIY, A.M., inzh.; KRYUCHKOV, V.V., inzh.; KOTOV, V.A., inzh.; LEYDERMAN, A.Ye., inzh.; PODGOYETSKIY, M.L., inzh.; SAZHAYEV, V.G., inzh.; SEVAST'YANOV, V.V., inzh.; FILIPPOV, S.F., inzh.; FROMBERG, A.B., inzh.; SHNEYEROV, M.S., inzh.; ERLIKH, G.M., inzh.; VERKHOVSKIY, B.I., red.; ZUBKOV, G.A., red.; LARKLINA, T.O., red.; OVCHARENKO, Ye.Ya., red.; ANTONOV, B.I., ved. red.

[New means of automatic and centralized control for nonferrous metal mines] Novye sredstva avtomatizatsii i dispetcherskogo upravleniia dlia rudnikov tsvetnoi metallurgii. Moskva, Nedra, 1965. 93 p. (MIRA 18:4)

PETROVA, L. Yu.; SHNEYEROV, M.S.; SUKHOVA, S.D.; LEFEROV, I.A.

Possibility of applying the titration method for the automatic chemical analysis of solutions used in alumina production. TSvet. met. 38 no.1:48 Ja '65 (MIRA 18:2)

ANATOL'YEVSKIY, Pavel Aramovich; SHNEYEROV, Osip Markovich. Prinimala uchastiye: ANOKHINA, K.T.. PLOTNIKOV, N.A., prof., doktor tekhn. nauk, nauchnyy red.; BATRAKOV, V.A., red.

[Hydrogeological observations in boring and testing wells for water supply; methodological directions] Gidrogeologicheskie nabliudeniia pri burenii i oprobovanii skvazhin dlia vodosnabzheniia; metodicheskie ukazaniia. Pod nauchn.red. N.A.Plotnikova. Moskva, M-vo stroit.RSFSR, Glavspetspromstroi, 1959. (MIRA 12:12)
147 p.

1. Gosudarstvennyy Proyektnyy institut "Spetsstroyproyekt" (for Anatol'yevskiy, Shneyerov).
(Water-supply engineering) (Boring)

ANATOL'YEVSKIY, Pavel Aramovich; MALOYAN, Arminak Vladimirovich; SHNEYEROV, Osher Mendeleyevich; VOLOD'KO, I.F., kand. tekhn. nauk, nauchn. red.; DAVLETSHIN, Z.V., inzh.;nauchn.red.; KAZ'MIN-BALASHOV, A.I., inzh., nauchn. red.; KAYESHKOVA,S.M., ved. red.

[Operation and repair of water wells] Ekspluatatsiia i remont vodianykh skvazhin. Moskva, Izd-vo "Nedra," 1964. 211 p. (MIRA 17:5)

ACC NR: AM6033866 Monograph UR/

Ganichev, Ivan Aleksandrovich; Anatol'yevskiy, Pavel Aramovich; Shneyerov, Osip Markovich

Boring operations in construction (Proizvodstvo burovykh rabot v stroitel'stve) Moscow, Stroyizdat, 1966. 330 p. illus., biblio. 4000 copies printed.

TOPIC TAGS: drilling machine, well drilling machinery, boring machine, construction, general construction

PURPOSE AND COVERAGE: This book is intended for engineers and technicians working on the design and building of special industrial structures. It may also be used as a textbook by students of building institutes and technical institutes of higher education. The book discusses the basic methods of drilling used in industrial and civil construction for the erection of foundations, underground oil and gas reservoirs, blasting, the anchoring of rock, etc. Data is presented on drilling technology and the necessary equipment, instrumentation, and materials. Primary attention is devoted to the technical and economic factors of drilling and to advanced experience in production. The authors express their deep gratitude for the valuable advice of Doctor of Technical Sciences, Professor B. I. Vozdvizhenskiy. There are 99 references, 88 of which are Soviet.

TABLE OF CONTENTS (abridged)

Foreword -- 3

Part One. Basic Data on the Technology of Drilling Operations in Construction -- 6

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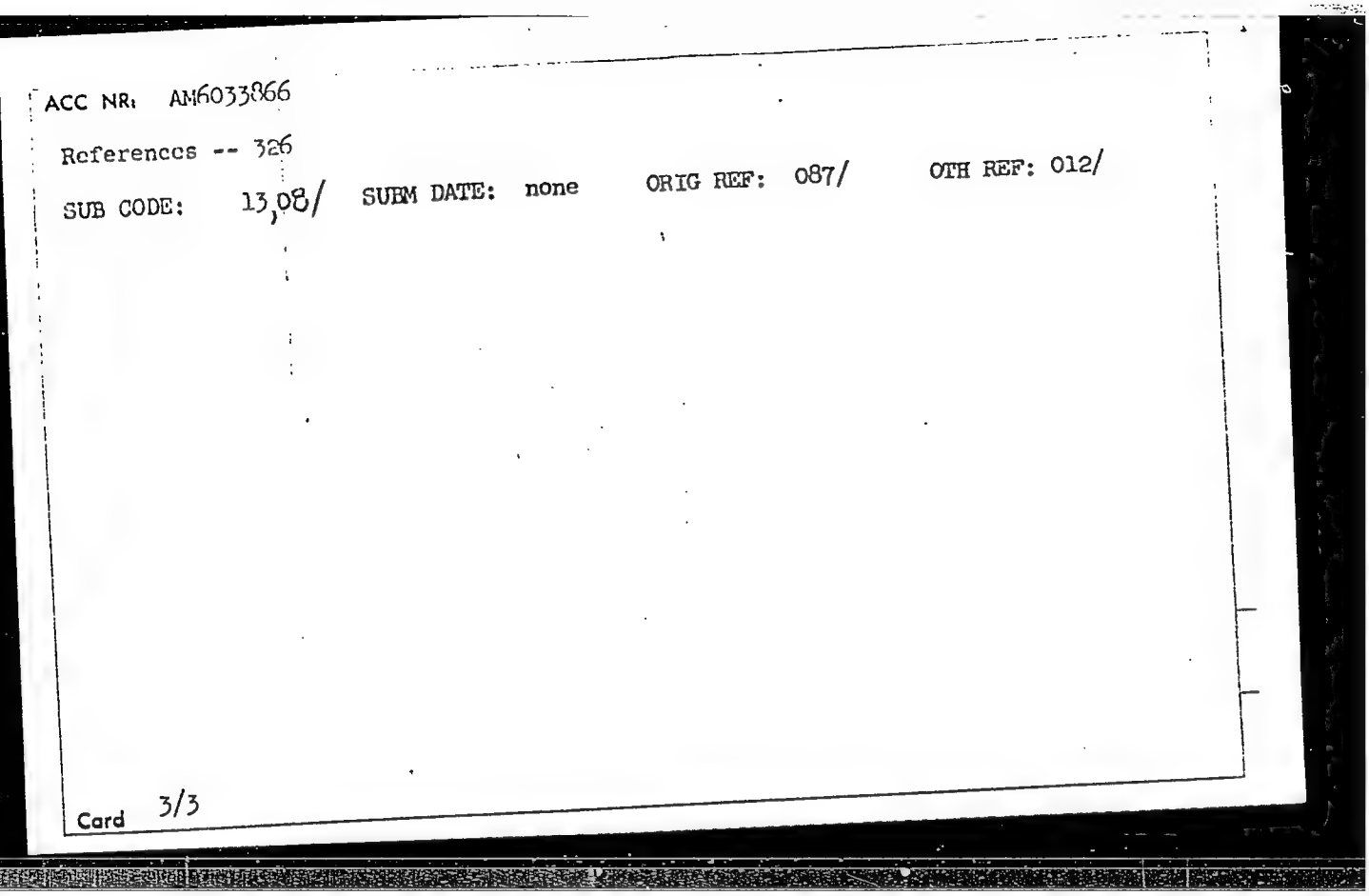


ACC NR: AM6033866

References -- 326

SUB CODE: 13,08/ SUBM DATE: none ORIG REF: 087/ OTH REF: 012/

Card 3/3

DEMIDOV, P.G.; KORNEYEV, Yu.N., red.; SHNEYEROV, S.A., red.;
PETROVSKAYA, Ye., tekhn. red.

[Fundamentals of the combustion of substances] Osnovy goreniia veshchestv. Moskva, Izd-vo M-va kommun.khoz. RSFSR, 1951. 295 p. (MIRA 16:7)

(Combustion)

LEV, Ye.Yu.; SHNEYEROV, S.M.

Reorganizing the supply of raw materials is an urgent problem of the glass industry. Stek. i ker. 18 no. 3:1-3 Mr '61. (MIRA 14:5)

(Glass manufacture)

SHNEYEROV, S.M.

Economic survey of glass manufacture in foreign countries. Stek.i ker. 14 no.8:27-29 Ag '57. (MIRA 10:10)
(Glass manufacture)

L 24004-66 EWT(1)/EWT(m)/EPF(n)-2/T/ETC(m)-6 WW/DJ/WE

ACC NR: AP6009921 (A) SOURCE CODE: UR/0413/66/000/004/0116/0117

AUTHOR: Shneyerov, V. S.; Kreps, L. I.

ORG: none

TITLE: An accumulative fuel pump for internal combustion engines. Class 46, No. 179123 [announced by Central Scientific Research and Design Institute of Fuel Systems for Automotive and Stationary Engines (Tsentral'nyy nauchno-issledovatel'skiy i konstruktorskiy institut toplivnoy apparatury avtotraktornykh i statsionarnykh dvigateley)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 116-117

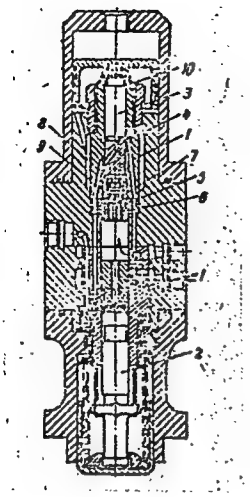
TOPIC TAGS: engine fuel system, engine fuel pump, internal combustion engine component

ABSTRACT: This Author's Certificate introduces an accumulative fuel pump for internal combustion engines based on Author's Certificate No 166199. The pump contains coaxial sleeves with a piston and a counterpiston which has a metering channel and a washer located between the sleeves with a connecting channel. The design is simplified and the reliability is improved by provision for a metering valve in the connecting channel. The counterpiston has throttling slots for connecting the accumulation cavity to the metering channel so that the cross sections of the damping slots are gradually reduced as the counterpiston is seated.

Card 1/2 UDC: 621.43.038.5

L 24004-66

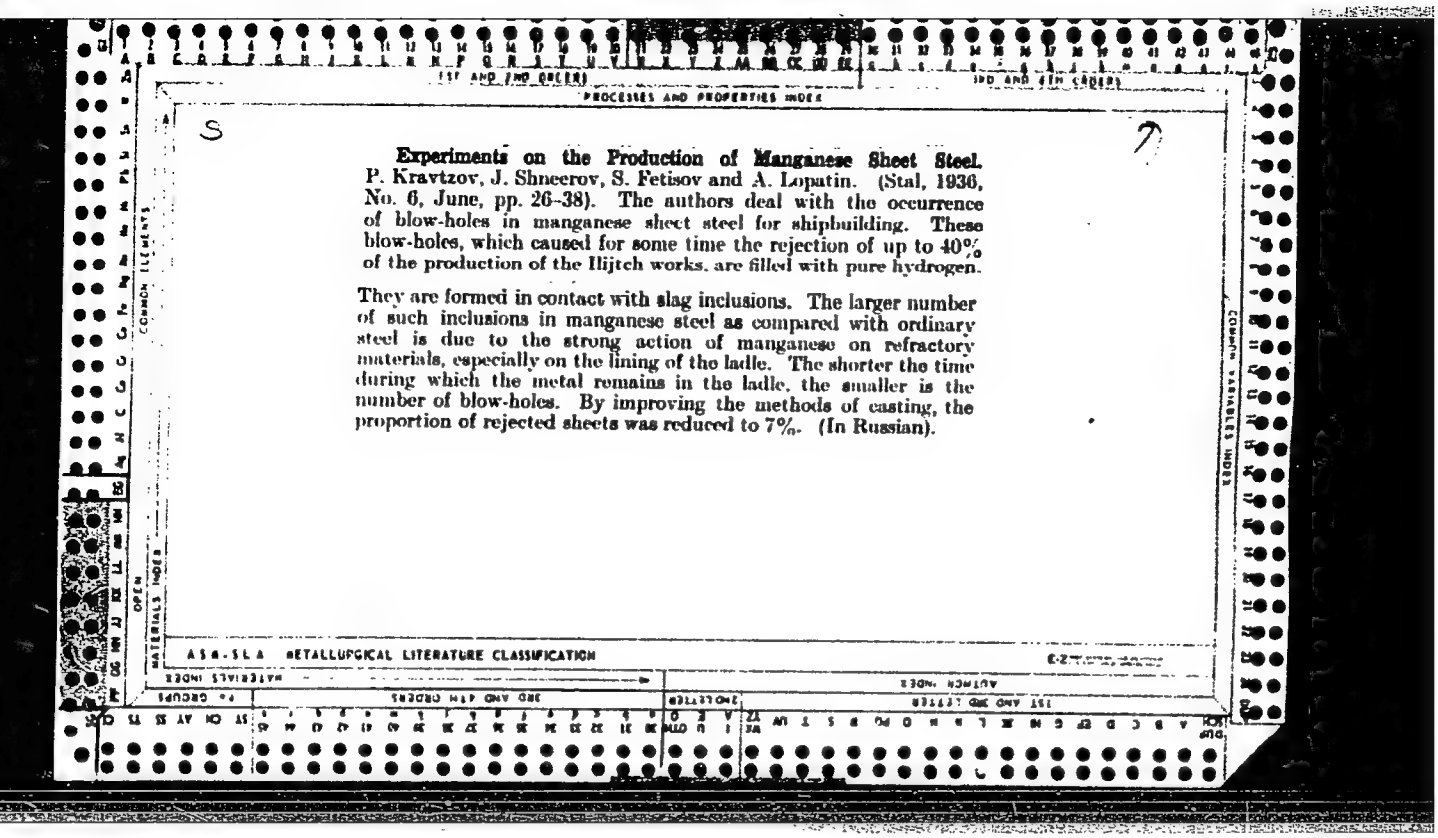
ACC NR: AP6009921



1--sleeves; 2--piston; 3--counterpiston; 4--metering channel; 5--washer; 6--connecting channel; 7--metering valve; 8--throttling slot; 9--accumulation cavity; 10--piston seat.

SUB CODE: 21/ SUBM DATE: 04Jun63/ ORIG REF: 000/ OTH REF: 000

Card 2/2



PROCESSES AND PROPERTIES INDEX

S

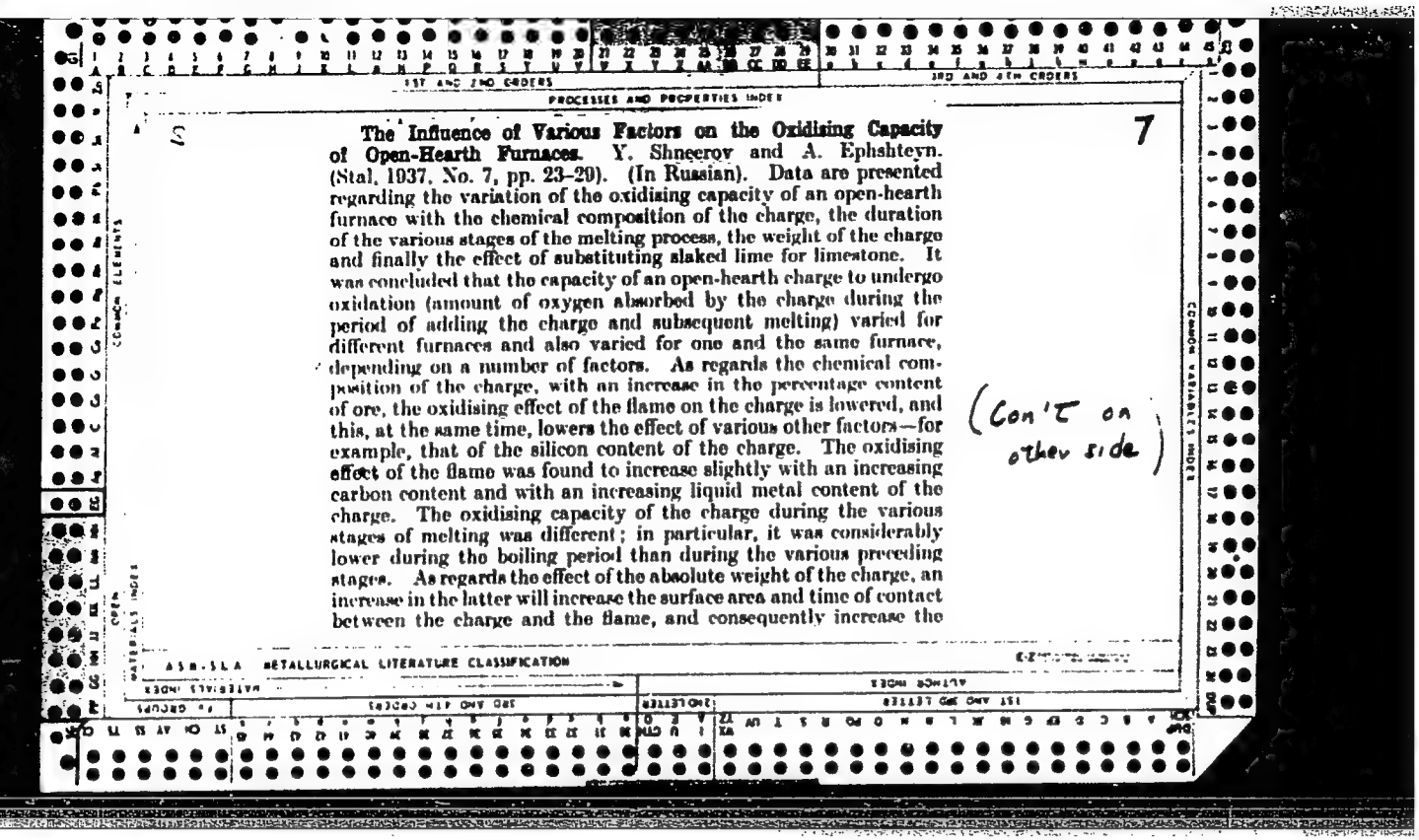
Experiments on the Production of Manganese Sheet Steel. P. Kravtzov, J. Shneerov, S. Fetisov and A. Lopatin. (Stal, 1936, No. 6, June, pp. 26–38). The authors deal with the occurrence of blow-holes in manganese sheet steel for shipbuilding. These blow-holes, which caused for some time the rejection of up to 40% of the production of the Ilijtch works, are filled with pure hydrogen.

They are formed in contact with slag inclusions. The larger number of such inclusions in manganese steel as compared with ordinary steel is due to the strong action of manganese on refractory materials, especially on the lining of the ladle. The shorter the time during which the metal remains in the ladle, the smaller is the number of blow-holes. By improving the methods of casting, the proportion of rejected sheets was reduced to 7%. (In Russian).

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

SHNEYEROV, Ya.A. and FETISOV, S.G.

"The Techmological and Orgainzational Foundation of the Records Achieved by Maker Mazay, the Steel Maker," Stal' [Steel], Nos 4/5/ 1937.



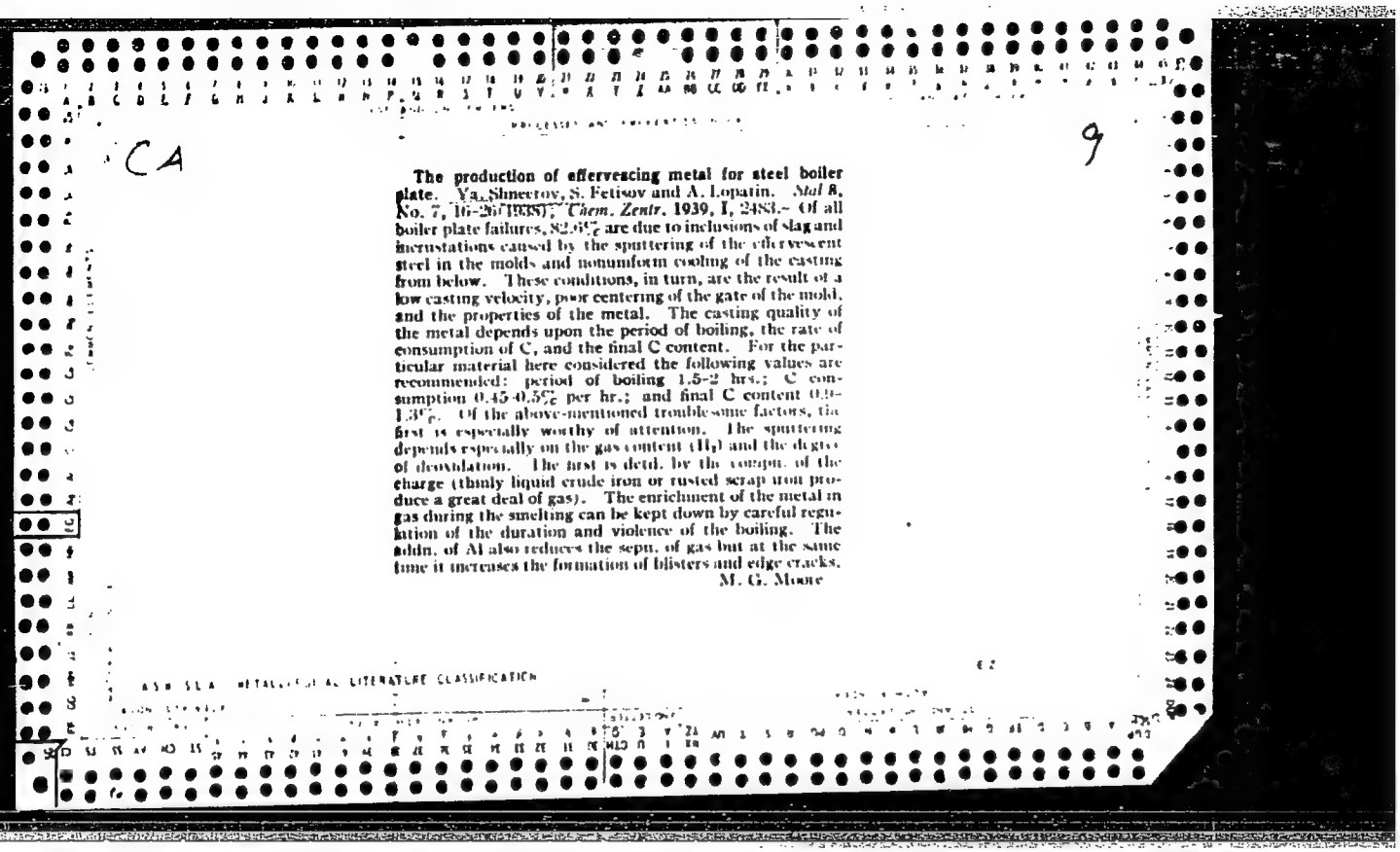
PROCESSES AND PROPERTIES INDEX

7

The Influence of Various Factors on the Oxidising Capacity of Open-Hearth Furnaces. Y. Shneerov and A. Ephshteyn. (Stal, 1937, No. 7, pp. 23–29). (In Russian). Data are presented regarding the variation of the oxidising capacity of an open-hearth furnace with the chemical composition of the charge, the duration of the various stages of the melting process, the weight of the charge and finally the effect of substituting slaked lime for limestone. It was concluded that the capacity of an open-hearth charge to undergo oxidation (amount of oxygen absorbed by the charge during the period of adding the charge and subsequent melting) varied for different furnaces and also varied for one and the same furnace, depending on a number of factors. As regards the chemical composition of the charge, with an increase in the percentage content of ore, the oxidising effect of the flame on the charge is lowered, and this, at the same time, lowers the effect of various other factors—for example, that of the silicon content of the charge. The oxidising effect of the flame was found to increase slightly with an increasing carbon content and with an increasing liquid metal content of the charge. The oxidising capacity of the charge during the various stages of melting was different; in particular, it was considerably lower during the boiling period than during the various preceding stages. As regards the effect of the absolute weight of the charge, an increase in the latter will increase the surface area and time of contact between the charge and the flame, and consequently increase the

(Con't on other side)

total amount of oxygen absorbed by the charge per unit time. The amount of oxygen absorbed per unit weight of the charge and per unit time, however, is decreased with increasing total weight of the charge, as the ratio of the surface of contact between the charge and the furnace gases per unit weight is decreased. In this connection it is pointed out in conclusion that it is more correct to express the oxidising capacity of the open-hearth furnace in terms of the amount of oxygen absorbed per unit weight of the charge per unit time, rather than in terms of units of oxygen absorbed by the whole charge during the whole of the period or during one hour of the melting process.



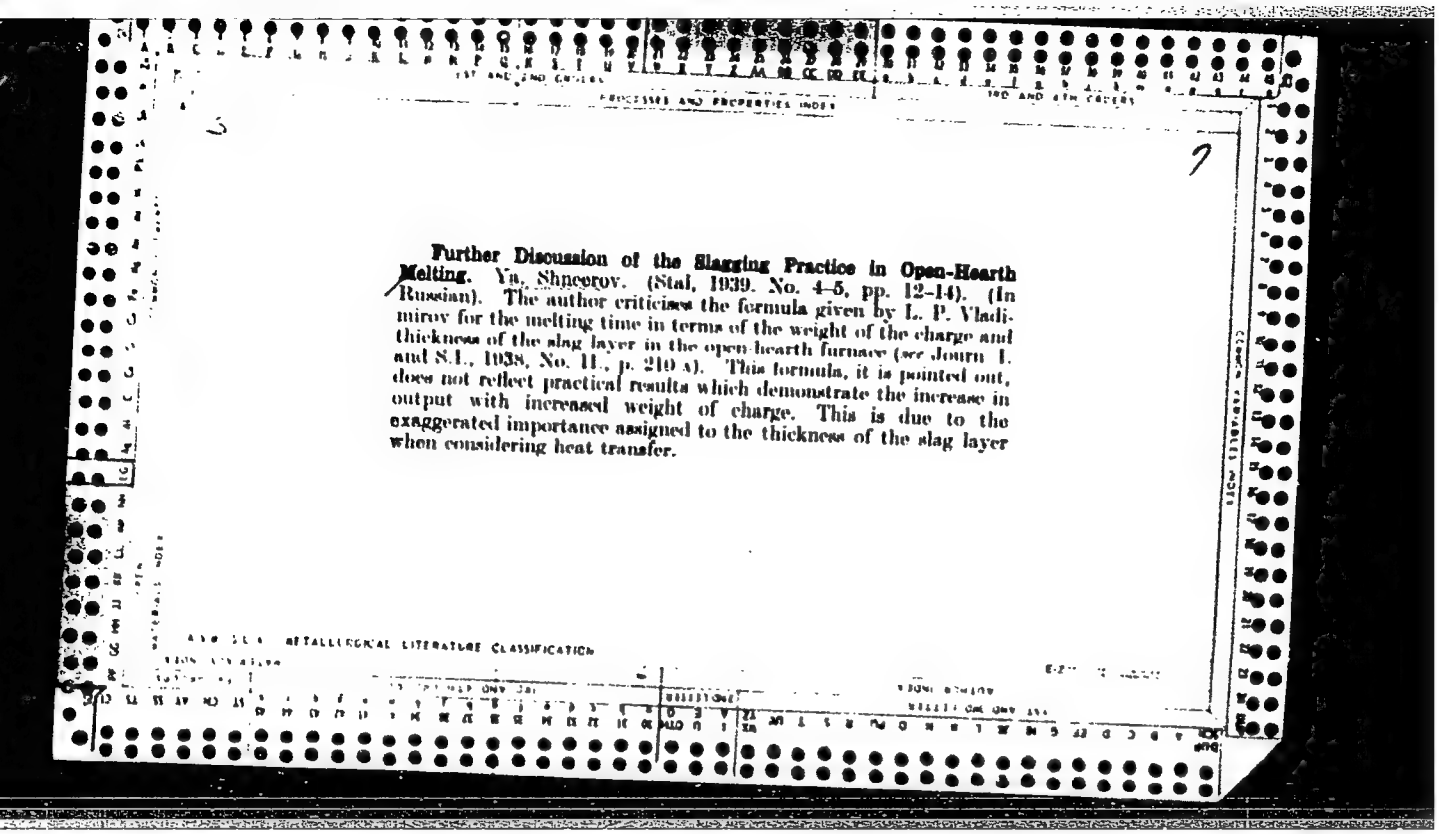
CA

9

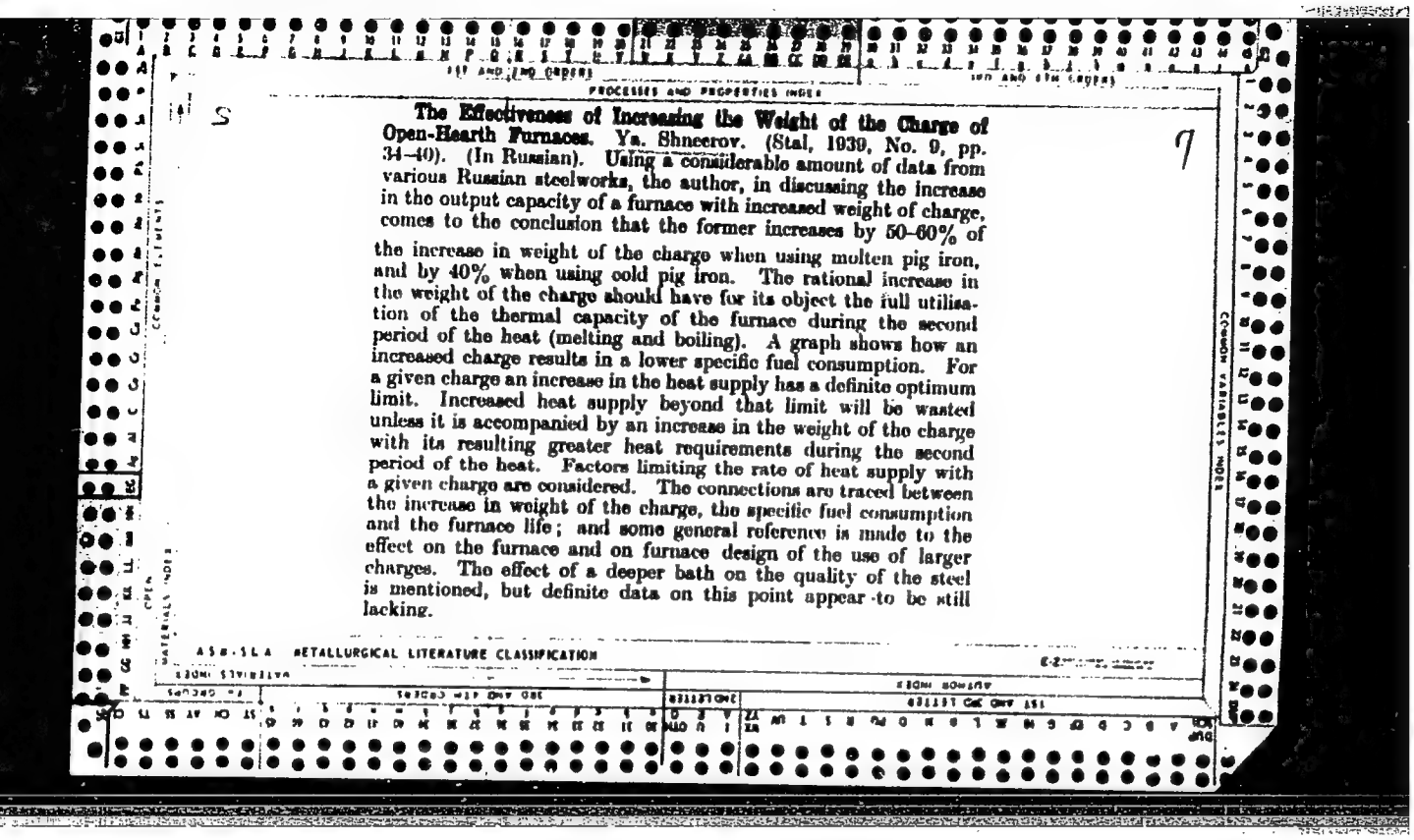
The production of effervescing metal for steel boiler plate. Ya. Shneerov, S. Fetisov and A. Lopatin. *Stal* 8, No. 7, 10–26 [1938]; *Chem. Zentr.* 1939, I, 2483.– Of all boiler plate failures, 82.6% are due to inclusions of slag and incrustations caused by the sputtering of the effervescent steel in the molds and nonuniform cooling of the casting from below. These conditions, in turn, are the result of a low casting velocity, poor centering of the gate of the mold, and the properties of the metal. The casting quality of the metal depends upon the period of boiling, the rate of consumption of C, and the final C content. For the particular material here considered the following values are recommended: period of boiling 1.5–2 hrs.; C consumption 0.45–0.5% per hr.; and final C content 0.9–1.3%. Of the above-mentioned troublesome factors, the first is especially worthy of attention. The sputtering depends especially on the gas content (H_2) and the degree of deoxidation. The first is detd. by the compn. of the charge (thinly liquid crude iron or rusted scrap iron produce a great deal of gas). The enrichment of the metal in gas during the smelting can be kept down by careful regulation of the duration and violence of the boiling. The addn. of Al also reduces the sepn. of gas but at the same time it increases the formation of blisters and edge cracks.

M. G. Moore

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



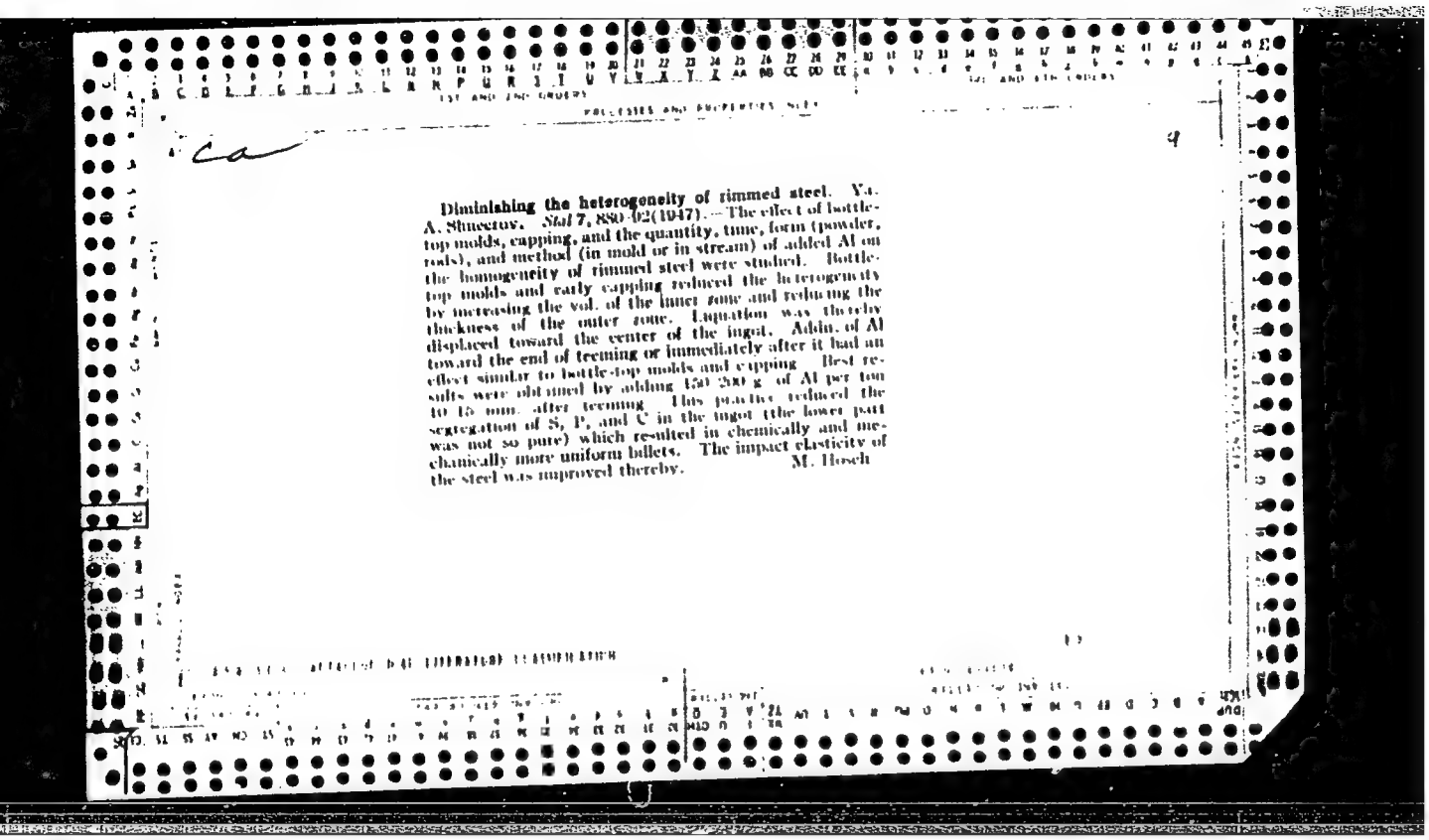
Further Discussion of the Slagging Practice in Open-Hearth Melting. Yu. Shneerov. (Stal, 1939. No. 4–5, pp. 12–14). (In Russian). The author criticises the formula given by L. P. Vladimirov for the melting time in terms of the weight of the charge and thickness of the slag layer in the open-hearth furnace (see Journ. I. and S.I., 1938, No. II., p. 210 A). This formula, it is pointed out, does not reflect practical results which demonstrate the increase in output with increased weight of charge. This is due to the exaggerated importance assigned to the thickness of the slag layer when considering heat transfer.



S

The Effectiveness of Increasing the Weight of the Charge of Open-Hearth Furnaces. Ya. Shneerov. (Stal, 1939, No. 9, pp. 34–40). (In Russian). Using a considerable amount of data from various Russian steelworks, the author, in discussing the increase in the output capacity of a furnace with increased weight of charge, comes to the conclusion that the former increases by 50–60% of the increase in weight of the charge when using molten pig iron, and by 40% when using cold pig iron. The rational increase in the weight of the charge should have for its object the full utilisation of the thermal capacity of the furnace during the second period of the heat (melting and boiling). A graph shows how an increased charge results in a lower specific fuel consumption. For a given charge an increase in the heat supply has a definite optimum limit. Increased heat supply beyond that limit will be wasted unless it is accompanied by an increase in the weight of the charge with its resulting greater heat requirements during the second period of the heat. Factors limiting the rate of heat supply with a given charge are considered. The connections are traced between the increase in weight of the charge, the specific fuel consumption and the furnace life; and some general reference is made to the effect on the furnace and on furnace design of the use of larger charges. The effect of a deeper bath on the quality of the steel is mentioned, but definite data on this point appear to be still lacking.

7



Diminishing the heterogeneity of rimmed steel. Ya. A. Shmerov. *Stal* 7, 880-92(1947).—The effect of bottle-top molds, capping, and the quantity, time, form (powder, rods), and method (in mold or in stream) of added Al on the homogeneity of rimmed steel were studied. Bottle-top molds and early capping reduced the heterogeneity by increasing the vol. of the inner zone and reducing the thickness of the outer zone. Liquation was thereby displaced toward the center of the ingot. Addn. of Al toward the end of teeming or immediately after it had an effect similar to bottle-top molds and capping. Best results were obtained by adding 150-200 g. of Al per ton 10-15 min. after teeming. This practice reduced the segregation of S, P, and C in the ingot (the lower part was not so pure) which resulted in chemically and mechanically more uniform billets. The impact elasticity of the steel was improved thereby.

M. Hosch

SHNEYEROV, Ya. A.

"Large-Capacity Open-Hearth Furnace," Problemy Matallurgii, pp 295-300, 1953

Trans. - M-287, 22 Mar 55

SHNEYEROV, Ya. A.

Improving the Technology of Open-Hearth Smelting Working the Scrap-Ore Process. Ya. A. Shneerov and A. N. Morozov. (*Stal'*, 1955, (4), 312-326). [In Russian]. The present article deals with new instructions on the production of quality steels in basic O.H. and is based on co-operative work by research and works staffs in the U.S.S.R. The high incidence of incorrectly proportioned charges at some works is attributed to lack of standardization of pig-iron and scrap composition and to fluctuation in ore composition. Examples of present fettling practice and of defective organization of this work are briefly considered. This is followed by a more detailed discussion of charging, including the relation of the temperature of the solids to time and the duration of melting down of the whole charge to the duration of charging of the metallic part of the charge. Changes in slag composition with time, the desulphurization and dephosphorization reactions and flushing practice are dealt with. The article concludes with consideration of finishing practice including slag flushing, the oxygen content of the metal during the boil, the presence of non-metallic inclusions, changes in the hydrogen content of the metal, the behaviour of manganese, the iron oxide content of the slag and deoxidation.—S. K.

SHNEYEROV, Ya. A.

M16 Improving open-hearth practice. Ya. A. Shneerov and A. N. Morozov. *Stal'* 15, 312–28(1955).—The open-heart practice of the country follows official instruction issued for the last time in 1947. During 1951–53, the actual practice and the methods for improving it were studied both by scientific institutions and plant personnel resulting in a new set of instructions minutely covering every step of open-hearth operations and analyzing conditions to be met. The present paper surveys these instructions. When statistical methods could provide the necessary data, they were used, otherwise systematic series of heats were run in 80–350-ton capacity furnaces. Better thermal effect of basic roofs is shown. The O-C ratio in the bath as a function of capacity is given. Independence of the degree of bath oxidation from Mn concn., rate of C removal, etc., is shown in diagrams. Slagging SiO_2 by MnO for cleaning the steel is challenged. Factors leading to an increased H content are at not all clear, but oreing drops it, boiling increases, while lowering lime addn. during boiling keeps it down. An increase of H on deoxodizing with FeSi and FeMn cannot be directly connected with the gas content of addns. Reversing the order of deoxidation with FeMn and FeSi does not affect inclusions in steel, though the practice saves Mn. Oxidation achieved with their use corresponds to the limits defined by each of them. Factors investigated are illustrated with 30 diagrams. J. D. Gat

SHNEYEROV, Yakov Aronovich; MIKHAYLOV, O.A., redaktor; CHERNYAK, I.G., redaktor izdatel'stva; EVENSON, I.M., tekhnicheskiy redaktor.

[Open-hearth furnaces of large capacity] Martenovskaia pech' bol'shoi emkosti. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 107 p. (MLRA 9:6)
(Open-hearth furnaces)

SHNEYEROV, Ya.A.

Use of oxygen in open-hearth furnaces running on high-phosphorus iron. Ya. A. Shneerov, G. N. Oiks, V. V. Leporskii, V. G. Sladkoshteev, A. I. Sukachev, and F. N. Stepkanev (Steel Inst., Moscow). *Stal'* 16, 597–90(1956). —Expts. were conducted in a 350-ton tilting furnace introducing O into the bath from the back wall. A very detailed study of the factors involved leads to the conclusion that introduction of O into the bath is about 2.5 times more effective than adding the same amount of it to the flame. Increased addn. of the gas leads to a proportional shortening of the time of heats, and the roof life is not affected. More dust is produced. No deterioration of metal properties is observed when blowing is stopped 60 min. before deoxidizing rail steel and 30 min. before that of open steels.

I. D. Gat

Metal

SHNEYEROV, YE.A.

SHNEYEROV, Ye.A.; LEPORSKIY, V.V.; OYKS, G.N.; SLADKOSHTEYEV, V.T.; SUKACHEV, A.I.; KAPUSTIN, Ye.A.; BUL'SKIY, M.T.; SLEPKANEV, P.N.

Oxygen fed into the fuel spray of large open-hearth furnaces during conversion of phosphorous cast iron. Stal' 16 no.10:875-882 O '56. (MLRA 10:9)

1. Ukrainskiy institut metallov, zavod "Azovstal'" i Moskovskiy institut stali.
(Open-hearth furnaces) (Oxygen--Industrial applications)

PHASE I BOOK EXPLOITATION 268

Shneyerov, Ya. A., Morozov, A.N. Chapters I-III and paragraph 1 of Chapter VI, written in collaboration with Rabinovich, A.G.

Tekhnologiya martenovskoy plavki; obobshcheniye peredovogo opyta (Technology of the Open-hearth Process; Experience of Leading Steel Mills) Moscow, Metallurgizdat, 1957. 219 p. 4,500 copies printed.

Sponsoring agencies: Ukrainskiy institut metallov and Chelyabinskiy politekhnicheskiy institut.

Ed.: Korolev, M.I.; Ed. of Publishing House: Rozentsveyg, Ya.D.; Tech. Ed.: Evenson, I.M.

PURPOSE: This book is intended for steel-foundry engineers, workers in scientific research institutes and planning organizations. It may also be useful to vuz and technical school students.

COVERAGE: The book presents the findings of leading steel mills obtained from 1951 to 1955 on increasing production of open-hearth

Card 1/5

Technology of the Open-hearth Process (Cont.)

foundries and improving smelting by the scrap process. The book discusses time required for charging, heating, smelting, finishing and the open-hearth-furnace heating regime. Personalities mentioned include: Ya. A. Shneyerov, who was responsible for the research done at the Ukrainskiy institut metallov (Ukrainian Institute of Metals); A.N. Morozov, Doctor of Technical Sciences, who directed the research done by the Leningrad and Chelyabinsk Polytechnical Institutes; M.M. Karnaukhov, Academician, general director of research and consultant. The following are mentioned in connection with research done at the Ukrainian Institute of Metals: A.G. Rabinovich, A.G. Derfel', V.S. Terekhova, A.G. Kotin, M.D. Logovinskiy, S.D. Loshchilov, Ye. G. Goykhman, V.G. Podoynitsyn. Scientific contributors from the Steel Metallurgy Department of the Leningrad Polytechnical Institute are: B.V Frontinskiy; A.Kh. Urazgil'deyev; S.D. Karpov, Engineer; D.G. Maksimchuk; and O.K. Sadovnik. Scientific contributors from the Steel Metallurgy Department of the Chelyabinsk Polytechnical Institue are: E.I. Kasperovich, A.I. Stroganov, V.F. Isayev, and I. V. Markov.

Card 2/5

SHNEYEROV, YA. A.

137-1958-1-334

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 51 (USSR)

AUTHORS: Morozov, A. N., Shneyerov, Ya. A.

TITLE. Slag Formation During Fusion in Basic Open Hearth Furnaces (Shlakoobrazovaniye vo vremya plavleniya v osnovnykh martenovskikh pechakh)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 132-142. Diskus. pp 160-187

ABSTRACT: Theoretical concepts and experimental and industrial data from the plants in the east and south of our country are employed to examine problems of the formation of primary slag and the drossing of S and P during melts in open hearths working on scrap and ore. It is established that slagging off of the maximum amount of slag per heat makes for good drossing of P. The (S)/[S] ratio attains a maximum 15 to 20 minutes after the iron has been charged into the furnace. The maximum depends primarily upon the (MnO) in the slag, and varies from 1.0-2.0 at 9% (MnO) to 4-5 at 23% (MnO). The order in which the free-flowing materials are charged has a major effect upon the process of primary slag formation, particularly upon (FeO). Analysis of charging methods has shown

Card 1/2

SHNEYEROV, YA.A.

AUTHOR: Shneyerov, Ya.A. and Kotin, A.G. 130-8-7/20

TITLE: Ways of Increasing the Productivity of Open-hearth Shops (Puti povysheniya proizvoditel'nosti martenovskikh tsekhov)

PERIODICAL: Metallurg, 1957, No.8, pp. 18 - 20 (USSR)

ABSTRACT: This is a report presented by the authors at the All-Union Steel-smelters' Conference. It is based on a study of the organisation of work in the open-hearth shops at the Magnitogorsk and Kuznetsk combines and the "Zaporozhstal'", "Azovstal'", imeni Kirov (imeni Kirova), imeni Voroshilov (imeni Voroshilova) and imeni Dzerzhinskiy (imeni Dzerzhinskogo) Works. From this study, conclusions on best organisational practice for shops with large-capacity furnaces were generalised. The authors contrast practice at Kuznetsk and Magnitogorsk on the one hand with that at the Southern Works. The aspects considered by the authors include preservation of furnace dimensions during a campaign, standardisation of charging, charging equipment and layout, constancy of hot-metal composition, slag-running, crane capacity and availability, pouring methods (until recently almost exclusively bottom-pouring at Southern Works), ingot stripping, furnace repairs and tapping practice.

ASSOCIATION: Ukrainian Institute of Metals (Ukrainskiy Institut Metallov)

AVAILABLE: Library of Congress.

Card 1/1

137-58-6-11687

Oxygen Applications in Open-hearth Steelmaking

elimination of delays in tapping. The use of O_2 increases the dust content of the combustion products by 2.5-3 times during the heating and addition times, and by 5-10 times during the blow. To reduce dust formation during the blow it is deemed necessary to conduct experiments in blowing the bath with a mixture of steam and oxygen. Ref. also RzhMet, 1957, Nr 3, abstract 3802.

V.G.

1 Open hearth furnaces--Performance 2. Oxygen--Applications 3. Steel--Production

Card 2/2

SHNEYEROV, Ya. A.

137-58-5-9104

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 51 (USSR)

AUTHOR: Shneyerov, Ya.A., Kotin, A.G.

TITLE: Means of Increasing the Productivity of Steel Smelting Shops (Puti povysheniya proizvoditel'nosti staleplavil'nykh tsekhov)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Nr 18, pp 469-474

ABSTRACT: Bibliographic entry. Ref. RzhMet, 1958, Nr 1, abstract 353

1. Steel--Production 2. Steel--Processing

Card 1/1

SHNEYEROV, Ya.A.

DANIKHELKA, A., doktor, inzh.; MIKHAYLOV, O.A., kand. tekhn. nauk; GONCHARENKO, N.I.; KLIMASENKO, L.S.; OYKS, G.N., prof., doktor tekhn. nauk; SEMENENKO, P.P.; MOROZOV, A.N., prof., doktor tekhn. nauk; GLINKOV, M.A., prof., doktor tekhn. nauk; KAZANTSEV, I.G., prof., doktor tekhn. nauk; KOCHO, V.S., prof., doktor tekhn. nauk; ENEKESH, Sh., kand. tekhn. nauk; MOROZENSKIY, L.I., kand. tekhn. nauk; GURSKIY, G.V.; SPERANSKIY, V.G.; NOVIK, L.M., kand. tekhn. nauk; starshiy nauchnyy sotrudnik; SHNEYEROV, Ya.A., kand. tekhn. nauk; PAPUSH, A.G., kand. tekhn. nauk; MAZOV, V.F.; SAMARIN, A.M.

Discussions. Biul. TSNIICHM no.18/19:17-35 '57. (MIRA 11:4)

1. Glavnyy staleplavil'shchik Ministerstva metallurgicheskoy promyshlennosti i rudnikov Chekhoslovatskoy respubliki (for Danikhelka). 2. Direktor TSentral'nogo instituta informatsii chernoy metallurgii (for Mikhaylov). 3. Direktor Ukrainskogo instituta metallov (for Goncharenko). 4. Glavnyy staleplavil'shchik Kuznetskogo metallurgicheskogo kombinata (for Klimasenko). 5. Zaveduyushchiy kafedroy metallurgii stali Moskovskogo instituta stali (for Oyks). 6. Zamestitel' glavnogo inzhenera zavoda im. Serova (for Semenenko). 7. Zaveduyushchiy kafedroy metallurgii stali Chelyabinskogo politekhnicheskogo instituta (for Morozov). 8. Zaveduyushchiy kafedroy metallurgicheskikh pechey Moskovskogo instituta stali (for Glinkov). 9. Zaveduyushchiy kafedroy metallurgii stali Zhdanovskogo metallurgicheskogo instituta (for Kazantsev). 10. Zaveduyushchiy kafedroy metallurgii stali Kiyevskogo politekhnicheskogo instituta (for Kocho).

(Continued on next card)

DANIKHELKA, A.---(continued) Card 2.

11. Nachal'nik tekhnicheskogo otdela Ministerstva chernoy metallurgii Vengerskoy Narodnoy Respubliki (for Enekesh). 12. Zamestitel' direktora Novotul'skogo metallurgicheskogo zavoda (for Gurskiy). 13. Nachal'nik tekhnicheskogo otdela zavoda "Dneprospetsstal' (for Speranskiy). 14. Institut metallurgii im. Baykova AN SSSR (for Novik). 15. Nachal'nik staleplavil'noy laboratorii Ukrainskogo instituta metallov (for Shneyerov). 16. Nachal'nik laboratorii po nepreryvnoy razlivke stali Zhdanovskogo filiala TSentral'nogo nauchno-issledovatel'skogo instituta Ministerstva stroitel'noy promyshlennosti (for Papush). 17. Nachal'nik martenovskogo tsekha zavoda "Zaporozhstal'" (for Mazov). 18. Zemestitel' direktora Instituta metallurgii im. Baykova AN SSSR, chlen-korrespondent AN SSSR (for Samarin).

(Steel--Metallurgy)

KOROLEV, A.I.; BLINOV, S.T.; LUBENETS, I.A.; KOBURNEYEV, I.M.; TURUBINER, A.L.; VASIL'YEV, S.V.; CHERNENKO, M.A.; BELOV, I.V.; TELESOV, S.A.; MAZOV, V.F.; MEDVEDEV, V.A.; MAL'KOV, V.G.; BUL'SKIY, M.T.; TRUBETSKOV, K.M.; SHNEYEROV, Ya.A.; SLADKOSHTEYEV, V.T.; PALANT, V.I.; KUROCHKIN, B.N.; ZHDANOV, A.M.; BELIKOV, K.N.; SABIYEV, M.P.; GARBUZ, G.A.; PODGORETSKIY, A.A.; ALFEROV, K.S.; NOVOLODSKIY, P.I.; MOROZOV, A.N.; VASIL'YEV, A.N.; MARAKHOVSKIY, I.S.; MALAKH, A.V.; VERKHOVTSEV, E.V.; AGAPOV, V.F.; VECHER, N.A.; PASTUKHOV, A.I.; BORODULIN, A.I.; VAYNSHTEYN, O.Ya.; ZHIGULIN, V.I.; DIKSHTEYN, Ye.I.; KLIMASENKO, L.S.; KOTIN, A.S.; MOLOTKOV, N.A.; SIVERSKIY, M.V.; ZHIDETSKIY, D.P.; MIKHAYLETS, N.S.; SLEPKANEV, P.N.; ZAVODCHIKOV, N.G.; GUDEMCHUK, V.A.; NAZAROV, P.M.; SAVOS'KIN, M.Ye.; NIKOLAYEV, A.S.

Reports (brief annotations). Biul. TSNIICHM no.18/19:36-39 '57. (MIRA 11:4)

1. Magnitogorskiy metallurgicheskiy kombinat (for Korolev, Belikov, Agapov, Dikshteyn). 2. Kuznetskiy metallurgicheskiy kombinat (for Blinov, Vasil'yev, A.N., Borodulin, Klimasenko). 3. Chelyabinskiy metallurgicheskiy zavod (for Lubenets, Vaynshteyn). 4. Zavod im. Dzherzhinskogo (for Koburneyev). 5. Zavod "Zaporozhstal'" (for Turubiner, Mazov, Podgoretskiy, Marakhovskiy, Savos'kin). 6. Makeyevskiy metallurgicheskiy zavod (for Vasil'yev, S.V., Mal'kov, Zhidetskiy, Al'ferov). 7. Stal'proyekt (for Chernenko, Zhdanov, Zavodchikov). 8. VNIIT (for Belov). 9. Stalinskiy metallurgicheskiy zavod (for Telesov, Malakh).

(Continued on next card)

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10. Nizhne-Tagil'skiy metallurgicheskiy kombinat (for Medvedev, Novolodskiy, Vecher). 11. Zavod "Azovstal'" (for Bul'skiy, Slepkanev). 12. TSentral'nyy nauchno-issledovatel'skiy institit chernoy metallurgii (for Trubetskov). 13. Ukrainskiy institut metallov (for Semyanov, Shakhoshteyev, Kokin). 14. Zavod "Krasnyy Oktyabr'" (for Paladi). 15. Vsesoyuznyy nauchno-issledovatel'skiy institut metallurgicheskoy teplotekhniki (for Kurochkin). 16. Zavod im. Voroshilova (for Sabiyev). 17. Chelyabinskiy politekhnicheskiy institut (for Morozov). 18. Giprostal' (for Garbuz). 19. Ural'skiy institut chernykh metallov (for Pastukhov). 20. Zavod im. Petrovskogo (for Zhigulin). 21. Ministerstvo chernoy metallurgii USSR (for Molochkov, Siverskiy). 22. Glavspetsstal' Ministerstva chernoy metallurgii SSSR (for Nikolayev).
(Open-hearth process)

SOV/130-58-8-5/18

AUTHORS: Shneyerov, Ya.A., Derfel', A.G., Kotin, A.G., Byl'skiy, M.T. and Alimov, A.G.

TITLE: Pre-refining Pig Iron in Ladles with a Steam-oxygen Mixture (Predvaritel'naya obrabotka chuguna v kovshakh parokislorodnoy smes'yu)

PERIODICAL: Metallurg, 1958, 3 Nr 8, pp 11 - 14 (USSR)

ABSTRACT: At the "Azovstal'" Works, hot metal forms 75% of the open-hearth furnace charge and conditions are therefore particularly suitable for pre-refining. A semi-full-scale installation (Figure 1) was constructed in the mixer house at the works. The authors describe tests on 130 ladles (114 phosphoric and 16 ordinary open-hearth grade). With 20-40% steam evolution of brown fumes was avoided. The following additions (in % of the weight of phosphoric iron) were also tested: limestone 1.5 and 3 with 1% ore in the latter case; ore, 2.5 and 5%; ore and limestone, 1.5 and 2.5% each. With the ordinary grade: limestone, 1.5; ore 1.5; ore and limestone 1.5 each. The authors describe the effects of the different additions on iron composition and lance consumption (which is associated with the formation of slag capable of coating the lance). With increasing consumption of

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Pre-refining Pig Iron in Ladles with a Steam-oxygen Mixture

oxygen per ton of metal (3-8 nm^3), oxidation of manganese and silicon increases. Steam consumption was regulated to prevent fume formation; the highest oxygen: steam ratios were obtained with large amounts of additions, which produced a protective slag layer. Both top blowing and lancing were tried, tube consumptions being 300-400 and 100 mm, respectively, per lancing. Temperatures were measured with platinum/platinum-rhodium thermocouples: the mean temperature rise during the lancing was 25-70 °C, the rise with additions being greater because of the greater oxidation of silicon. Analysis of the metal showed that good mixing occurred during mixing. Metal losses were as follows: splashes, 0.51%, evolution in fume 0.04%. The hydrogen content of the metal was found to rise during lancing from 2.3 - 3.9 to 4.6 - 6.0 $cm^3/100$ g, falling during pouring into the mixer to 4.2 - 4.3 $cm^3/100$ g

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SOV/130-58-8-5/18

Pre-refining Pig Iron in Ladles with a Steam-oxygen Mixture

There are 2 figures.

ASSOCIATIONS: Ukrainskiy institut metallov (Ukrainian Institute of Metals) and Zavod "Azovstal'" ("Azovstal'" Works)

Card 3/3

1. Iron--Production 2. Open hearth furnaces--Operation
3. Dippers--Applications

TRET'YAKOV, Ye.V.; SHNEYEROV, Ya.A.; KOTIN, A.G.

Using fluxed briquets and sinter cakes in open-hearth furnaces. Biul. TSNIICHM no.4:6-12 '58. (MIRA 11:5)
(Open-hearth process)

SOV/133-58-8-6/30

AUTHOR: Shneyerov, Ya.A., Derfel', A.G., Kotin, A.G., Bul'skiy, M.T. and Alimov, A.G.

TITLE: Experiments on a Pre-treatment of Pig Iron in Ladles with a Steam Oxygen Mixture (Opyt predvaritel'noy obrabotki chuguna v kovshakh parokislorodnoy smes'yu)

PERIODICAL: Stal', 1958, Nr 8, pp 694 - 702 (USSR)

ABSTRACT: Experimental results obtained on the de-siliconisation of pig iron in ladles by blowing an oxygen-steam mixture with and without various additions to the ladle are described. The treatment was carried out on the way to the mixer in the open-hearth melting shop. The experimental set-up is shown in Figure 1. Initially, blowing of pure oxygen was tried but, due to the formation of copious fumes, this was discontinued and an oxygen-steam mixture was used, steam being added according to blowing conditions to keep the formation of fumes down. The method of mixing oxygen with steam is shown in Figure 2 and the sampling device for taking samples from the ladles in the course of blowing - Figure 3. Additions of ore, limestone and ore-limestone mixtures to the ladle were introduced at blast furnaces during the filling of the ladle with iron. The compositions

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Experiments on a Pre-treatment of Pig Iron in Ladles with a Steam Oxygen Mixture

of additions and mean data on the elimination of pig-iron impurities during filling of the ladle, its transport to the mixer and during 15, 30 and 45 minutes of blowing oxygen, as well as mean iron temperatures before and after blowing are given in Tables 1 and 2. The dependence of the degree of de-siliconisation during 45 minutes of blowing on the initial concentration of silicon - Figure 4 and on the consumption of oxygen - Figure 5; mean consumption of oxygen and steam and limits of their variation for blowing with various additions to the ladle - Table 3; the dependence of oxidation of manganese during 45 minutes of blowing on the consumption of oxygen - Figure 6; the fall of the iron temperature during filling of the ladle and its transport to the place of the treatment - Table 4; the influence of the oxygen-steam ratio on the increase of the iron temperature during 45 minutes of blowing - Figure 7; changes in the chemical composition of iron along the height of the ladle after blowing - Table 5. Conclusions: 1) as a result of blowing phosphorus pig-iron (about 1.5% of P) in the ladle with an oxygen-steam mixture at a specific

Experiments on a Pre-treatment of Pig Iron in Ladles with a Steam Oxygen Mixture

consumption of oxygen of 4.8 m^3/t and of steam 4.0 kg/t at a pressure of 4.5 atm., the following elements are oxidised: 0.20% of silicon (41.5% of the initial content), 0.55% of manganese (29.5% of the initial content), and 0.29% of carbon (7.3% of the initial content). During the transport of the ladle, the content of sulphur was decreased by 0.027% and during blowing it was increasing by 0.003, thus the decrease in the sulphur content was 0.024% (21.2% of the initial content). The content of phosphorus remains practically unchanged. On blowing low phosphorus iron, the oxidation of iron admixtures was on the same level as for phosphorus iron; 2) the introduction of oxidising and slag-forming admixtures into the ladle during its filling with iron helped in oxidising the iron admixtures during the filling and the transport of the ladle and noticeably improved their oxidation during the blowing of oxygen. The best results in respect of the oxidation of admixtures, utilisation of oxygen and increasing the iron temperature were obtained with additions of 15 kg of ore and 15 kg of limestone per ton of iron. Under the above conditions, the

Experiments on a Pre-treatment of Pig Iron in Ladles with a Steam Oxygen Mixture

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following results were obtained (in brackets the percent of the initial content):

Phosphorus Iron	Si	Mn	C	S
Usual iron	0.44(66.7)	0.78(40.0)	0.31(8.0)	0.023(19.0)
	0.52(73.5)	0.62(30.5)	0.20(4.5)	0.025(26.0).

During surface blowing of oxygen (without immersing the tube into the iron), the oxidation of the elements remained the same; 3) on blowing with oxygen-steam mixture (20-40% by wt. of steam) the formation of brown fumes was not observed. With an increasing proportion of additions to the ladle the consumption of steam in the oxygen steam mixture was decreasing. On blowing without immersing the tube the proportion of steam can be decreased to 20%; 4) the increase in the iron temperature during surface blowing is higher than when blowing with an immersed tube. The temperature of the iron after blowing with the optimum additions of limestone and ore is 40 °C higher than the usual iron temperature delivered to the mixer; 5) the maximum utilisation of the volume of the ladle (up to 85%) was obtained

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Experiments on a Pre-treatment of Pig Iron in Ladles with a Steam Oxygen Mixture

on surface blowing (with 15 kg/t additions of limestone and ore); 6) the consumption of blowing tubes was 100 mm for ladle with surface blowing and 300-400 mm when the tube is immersed; 7) the total losses of metal on blowing were about 0.1%.
There are 7 figures, 5 tables and 7 references, 3 of which are Soviet and 4 English.

ASSOCIATIONS: Ukrainskiy institut metallov (Ukrainian Institute of Metals) and Zavod "Azovstal'" ("Azovstal'" Works)

Card 5/5

1. Iron--Production 2. Silicon--Oxidation 3. Oxygen --Applications 4. Steam--Applications 5. Dippers--Applications

SHNEYEROV, YA A.

О.Д.Зорин А.Е.Хлебников	Типы газового обезуглероживания и газосодержание в металле.
Я.А.Шнееров А.Г.Котов А.Г.Прохоров	Ускорение мартеновской плавки путем подготовки шихты.
Я.А.Шнееров А.И.Судаков А.Г.Котов	Ускорение процессов шлакообразования в плавильной шихты при загрузке кислорода в ванну мартеновской печи в период плавления.
Ф.П.Едерер	Применение комплексных раскислителей с целью сокращения восстановительного периода электроплавки.
Ф.П.Едерер	Изменение состава стали плавильной ванны дуговой электропечи при вдувании кислорода.
Е.А.Кожевин	Влияние окисления углерода при продувке кислородом его в ванне мартеновских печей.

report submitted for the 5th Physical Chemical Conference on Steel Production, Moscow-- 30 Jun 1959.

SHNEYEROV, YA. A.

SOV/133-59-5-6/31

AUTHORS: Derfel', A.G., Dubina, Yu.G., Kotin, A.G., Myshonkov, N.I., Sologub, S.L., Tret'yakov, Ye.V., Khmirov, V.I., Chernenko, F.A. and Shneyerov, Ya.A.

TITLE: Efficiency of the Use of Sinter and Briquettes Instead of Ore and Limestone in Open-hearth Furnaces (Effektivnost' primeneniya v martenovskikh pechakh aglomerata i briketov vzamen rudy i izvestnyaka)

PERIODICAL: Stal', 1959, Nr 5, pp 400 - 407 (USSR)

ABSTRACT: In order to compare the efficiency of using fluxed sinter and ore-lime briquettes instead of ore and limestone in open-hearth furnaces as well as to determine the optimum composition of the above agglomerated materials, experimental heats were carried out in 370-ton open-hearth furnaces at the imeni Dzerzhinskiy Works during 1957-1958 . Altogether 63 heats with briquettes, 70 with sinters of various compositions and 90 comparative heats using ore and limestone were made. All heats were made in the same furnaces and during the same periods. The composition of briquettes and sinters tested is given in Table 1 (basicity of briquettes varied from 0 - 5.4 and of

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sinters from 0.4 to 2.3). Changes in the basicity FeO content in slag in the course of smelting are shown in Figures 1 and 2, respectively, the main indices of the experimental and comparative heats in Table 2, the comparison of the amounts of CaO, SiO_2 and ΣFeO transferred to slag from various granular materials - Table 3, changes in the SiO_2 content of slag in the course of smelting for various heats - Figures 3 and 8, the same changes in slag basicity - Figure 4, the same changes in the P_2O_5 content - Figures 5 and 9, the same changes in the CaO content - Figure 6, the same changes in the ΣFeO and CaO and ΣFeO contents - Figures 7 and 11, the same changes in the content of sulphur - Figure 10. It was found that the use of fluxed briquettes or sinters instead of ore and limestone leads to a considerably faster formation of slag during the melting down period, to an earlier slag removal and to a corresponding decrease in the melting

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period. The use of fluxed briquettes or sinter of a basicity 2.0 - 2.5 without additions or with minimal additions of ore and limestone made it possible:
1) to decrease the melting period in 370-ton furnaces by 40-45 min with an increase in the furnace productivity of 6-7%; 2) to decrease the duration of heating up successive layers of granular materials during the charging period as well as their heating after the charging is completed (which permitted a further decrease of 10-15 min in the duration of heats); 3) to increase slag basicity in the course of smelting and to decrease the FeO content of slag at the beginning of the melting period and to increase its FeO content at the end of this period;
4) to increase the dephosphorising and desulphurising ability of slag due to its earlier formation and higher basicity throughout the whole course of smelting and
5) to exclude blow-outs from the furnace during melting. The briquettes and sinters can also be used with success during refining. The organisation of a large-scale

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production of fluxed briquettes and sinters for the open-hearth furnaces and their wide application in steel-making practice is recommended. There are 11 figures, 3 tables and 6 Soviet references.

ASSOCIATIONS: Ukrainskiy institut metallov (Ukrainian Institute of Metals) and Zavod imeni Dzerzhinskogo (imeni Dzerzhinskiy Works)

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SOV/133-60-1-8/30

AUTHORS: Shneyerov, Ya. A., Leporskiy, V. V., Derfel', A. G., Bul'skiy, M. T., Alimov, A. G.

TITLE: The Use of Preliminary Processed Cast Iron in Open-Hearth Smelting

PERIODICAL: Stal', 1960, Nr 1, pp 32-35 (USSR)

ABSTRACT: This is a report concerning ladle treatment of liquid cast iron blowing steam-oxygen mixture. The experiments were conducted at the "Azovstal'" Plant in 1957, on a semi-industrial installation in the mixing building. Only one ladle could be blown at a time. Later on, from June to August of 1958, fourteen experimental melts were made. B. S. Kurapin, V. I. Khmirov, N. T. Berilov, A. M. Kercher, and A. I. Tkachenko participated in the work. For each test melt, 4 ladles (each holding approximately 60 tons of cast iron) were blown. The beginning of blowing took place 1 to 2 hours before the beginning of the test melt. 1.5% of ore and 1.0% of lime were added to each ladle. The degree of filling the ladle

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was an average of 73%. The blowing schedule was as follows: Pressure (atm gage): for oxygen, 3.4; for steam, 3.5. Hourly consumption: oxygen, 295 m^3/hr; steam, 195 kg/hr. Specific consumption: oxygen, 2.6 m^3/ton; steam, 1.7 kg/ton. An increase of steam superheating (up to 300-400° C, instead of 160-180° C) will increase the degree of filling of the ladle by elimination of the splash-out. The open-hearth melts were conducted in 340-ton furnaces using the blown cast iron. The authors arrived at the following conclusions. (1) The experiments showed that during the preliminary blowing of conversion cast iron by the steam-oxygen mixture, silicon, manganese, and sulphur were burned out to the extent of 54%, 37%, and 13.7% respectively. (2) The average increase of temperature of cast iron during blowing equals 30° C. (3) As a result of the decreased consumption of ore and limestone (in the charge), while smelting the blown cast iron, and due to the increase of cast iron temperature, the duration of melts decreased by 45 minutes for rimmed

steel and by 1 hour 11 minutes for rail steel. The specific fuel consumption decreased and the productivity of the furnace increased on the average by 8%. In connection with good experimental results obtained at the "Azovstal'" Plant, it is planned to build an industrial installation for ladle treatment of cast iron. The editors comment that, due to the small number of test melts (only 5000 tons of steel were smelted) the above conclusions should be regarded as only preliminary. There are 2 figures.

ASSOCIATION: Ukrainian Scientific Research Institute of Metals and the "Azovstal'" Plant (Ukrayinskiy n.i. institut metallov i zavod "Azovstal'")

SHNEYEROV, Ya.A.; LEPORSKIY, V.V.; KAZARNOVSKIY, D.S.; KOTIN, A.G.; KURMANOV, M.I.; SUKACHEV, A.I.; SLADKOSHTEYEV, V.T.; BUL'SKIY, M.T.; SVIRIDENKO, F.F.; SIDEL'KOVSKIY, M.P.; KOZHEVNIKOV, I.Yu., red.; BORODAVKIN, M.L., red. izd-va; ISLENT'YEVA, P.G., tekhn. red.

[Converting phosphorous cast iron in open-hearth furnaces] Peredel fosforistykh chugunov v martenovskikh pechakh. Moskva, Gos. nauchno-tekhn. izd-vo po chernoi i tsvetnoi metallurgii, 1961. 256 p. (MIRA 14:8)

(Open-hearth process)

SHNEYEROV, Ya. A.

PHASE I BOOK EXPLOITATION SOV/5407

Afanas'yev, S.G., Candidate of Technical Sciences; B.S. Barskiy, Docent; Yu.Ye. Yefroymovich, Candidate of Technical Sciences; V.Yu. Kagnov, Candidate of Technical Sciences; B.N. Katomin, Engineer; V.Ye. Leykin, Engineer; I.N. Lur'ye, Engineer; O.A. Mikhaylov, Candidate of Technical Sciences; A.Ye. Ratsain, Engineer; M.Ye. Orman, Engineer; V.S. Rutes, Candidate of Technical Sciences; and Ya.A. Shneyerov, Candidate of Technical Sciences.

Tekhnicheskiy progress v chernoy metallurgii SSSR; staleplavil'noye proizvodstvo (Technological Progress in Soviet Ferrous Metallurgy; Steelmaking Industry) Moscow, Metallurgizdat, 1961. 495 p. Errata slip inserted. 3,200 copies printed.

Sponsoring Agencies: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR. Tsentral'nyy institut informatsii chernoy metallurgii.

Ed. and Scientific Ed.: G.N. Oyks, Professor, Doctor of Technical Sciences; Director of the Central Institute for Information on Ferrous Metallurgy: N.B. Arutyunov; Chief Ed.: Ya.A. Gol'din; Ed. of the Central Institute for Information on Ferrous Metallurgy: L.I. Khoras; Ed. of Publishing House: V.I. Ptitsyna; Tech. Ed.: P.G. Islent'yeva.

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Technological Progress (Cont.)

PURPOSE: This book is intended for technical and scientific personnel in the metallurgical and machine industries, and may also be used as a textbook by students in schools of higher education and tekhnikums.

COVERAGE: A review is made of the basic stages in the development of open-hearth, electric-hearth, electric-furnace, and converter steelmaking processes in the USSR. The present status of ferrous metallurgy and prospects for the future are examined. Present trends in the design, automation, and mechanization of steelmaking equipment are given. The state of the organization and mechanization of repairs in steelmaking plants, and methods of equipment maintenance are described. Problems in the process of steelmaking (the use of oxygen and vacuum, processing of phosphorus irons, improvement of the manufacture of individual types of steel, and steel casting) are discussed at length. No personalities are mentioned. There are 329 references: 317 Soviet, 9 English, 2 German, and 1 French.

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STEEL MANUFACTURE IN OPEN-HEARTH FURNACES

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* [illegible] MIRA

SHNEYEROV, G. A.

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PHASE I BOOK EXPLOITATION SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th, Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii (Physicochemical Bases of Steel Making; Transactions of the Fifth Conference on the Physicochemical Bases of Steelmaking) Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted. 3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg. Tech. Ed.: V. V. Mikhaylova.

Card 1/16

Physicochemical Bases of (Cont.)

PURPOSE: This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

COVERAGE: The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

Panov, A.S., and P.N. Perchatkin. Comparison of the Desulfurizing Capacity of Oxides During the Melting Period in Processing Low-Manganese Pig Irons 66

Shneyerov, Ya.A., A.G. Kotin, and A.G. Derfel'. Accelerating the Open-Hearth Process in the Preparation of the Charge (Pig Iron and Loose Materials) 70

Shneyerov, Ya.A., A.I. Sukachev, and A.G. Kotin. Accelerating the Slag Formation and Melting Processes by Blowing Oxygen Into the Bath During the Meltdown Period 81

Kazachkov, Ye.A. Kinetics of the Oxidation of Low-Concentrated Carbon in the Open-Hearth Bath 88

Zorin, O.D., and A.Ye. Khlebnikov. The Kinetic Decarburization

SHNEYEROV, Ya.A., kand.tekhn.nauk; DERFEL', A.G., kand.tekhn.nauk; KOTIN, A.G., kand.tekhn.nauk; Prinimali uchastiye: ZAYTSEV, I.A.; KURAPIN, B.S.; LEVITASOV, Ya.M.; SUKACHEV, A.I.; TRET'YAKOV, Ye.V.; UMNOV, V.D.; SHUKSTUL'SKIY, I.B.

Reducing the consumption of ferromanganese in the making of open-hearth steel. Trudy Ukr. nauch.-issl. inst. met. no.7:103-114 '61. (MIRA 14:11)

(Steel--Metallurgy) (Ferromanganese)

S/133/61/000/006/003/017
A054/A129

AUTHOR: Shneyerov, Ya. A.

TITLE: Semi-killed and stopped steels

PERIODICAL: Stal', no. 6, 1961, 516-518

TEXT: In February 1961, the Ukrainskiy institut metallov (Ukrainian Institute of Metals) and the Stalino Sovnarkhoz convened a meeting to discuss the production of semi-killed and stopped steels. The main advantages of semi-killed steel are production increase (7 - 10%) as a result of the reduced top cropping; the decrease in the consumption of deoxidizing agents (by about 50%); its more uniform structure. When semi-killed steel is used, less metal is required for the same product than when making it from killed steel, because there is less waste caused by lamination, for instance. Another type between rimming and killed steel is "stopped" steel, the rimming of which is stopped after the mold is filled, or at the end of pouring. The deoxidants (aluminum or ferrosilicon) are added onto the surface of the metal, or mechanically while the metal is being poured into the ingot of special hollow shape. Rolling stopped steel will raise the blooming mill output by 2-5%, because the ingot tops become

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A054/A129

Semi-killed and stopped steel

denser and the properties of steel improve due to a more uniform chemical structure. In 1955, the "Azovstal'" Plant began producing a slightly deoxidized semi-killed steel (Ст.5кп = St.5kp) for mine supports, which was deoxidized with ferromanganese in the ladle. In 1959, the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Plant) also started the production of semi-killed Ст.5пс, Ст.6пс (St.5ps, St.6ps) steel for mine supports and rails for small tracks. In this plant semi-killed steel was deoxidized in the ladle by 45% ferrosilicon max. 2 kg/t and aluminum, 50 g/t. Head cropping on the blooming stand was reduced to 5%. Since 1947, the Vyksunskiy zavod (Vyksunsk Plant) has produced semi-killed steel strips for tubes. Deoxidation is carried out with 0.4 - 0.5 kg/t aluminum. In 1959-60, the Ukrainian Institute of Metals, in cooperation with "Azovstal'", the Makeyevka and Krivoyrog Plants carried out tests to obtain a method of producing semi-killed steel (with C-content) in open-hearth furnaces and oxygen converters. In 1959, the Zaporozhstal' Plant in cooperation with TsNIIChM developed a technology for semi-killed steel instead of the St.3kp and 08kp rimming steels for hot-rolled sheets. In 1958-59, the Jenakiyevskiy metallurgicheskiy zavod (Jenakiyevo Metallurgical Plant) in cooperation with the Ukrainian Institute of Metals started the production of Вст.5пс, Вст.6пс (BSt.5ps, BSt.6ps) semi-killed steels for reinforcing purposes (5ps) and for mine rails (6ps). In 1960, the Zakavkazkiy metallurgicheskiy zavod (Transcaucasian

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Semi-killed and stopped steel

Metallurgical Plant) in cooperation with the Moskovskiy institut stali (Moscow Steel Institute) developed the technology for the St.2ps and 4ps steels, which could replace killed steel in rolling seamless tubes. Since 1959, the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Plant) applied the method of "capping" ("stopping") rimming steel (St. 3kp) chemically by feeding aluminum (75 - 115 g/t) under the metal jet at the end of pouring into the mold (3-5 sec before the stopper is removed). However, neither semi-killed nor stopped-steels are produced in considerable amounts in the USSR. In 1960 the quantity of semi-killed steel production was not more than 1%, that of stopped steel 0.5%. This is mainly due to the fact that metallurgists do not fully appreciate the advantages of this kind of steel, although the economic gain is noticeable in the first place in metallurgical plants. The present standards for carbon-steels are also unfavourable for semi-killed steels (ГОСТ/GOST 380-60). The meeting agreed upon that nearly all killed steels corresponding with GOST 1050-60 for a very large variety of products (ship building, for instance) could be replaced by semi-killed steels. The meeting also put forward suggestions for the technology of semi-killed and stopped steels: when semi-killed steel with more than 0.25% carbon is cast, deoxidation should take place in the ladle. Ferrosilicon should be used as deoxidant in an amount to ensure a 0.05-0.12% silicon content

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in the finished metal and also aluminum (100 - 300 g/t), depending on the carbon content. Chemical capping of rimming steel can be effected by the addition of 45% or 75% ferrosilicon. Aluminum was added in the form of metal grains, ferrosilicon in small lumps (10-20 mm in diameter). Practical suggestions were made to accelerate the manufacture of industrial-scale test products of semi-killed steel, mainly for the building industry, agricultural machinery, and to produce high-grade aluminum grains from second-grade aluminum.

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GOYKHMAN, Ye.G., referent; SHNEYEROV, Ya.A.

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(United States—Open-hearth furnaces—Design and construction)

SHNEYEROV, Ya.A.

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Stal' 23 no.9:792-798 S '63.